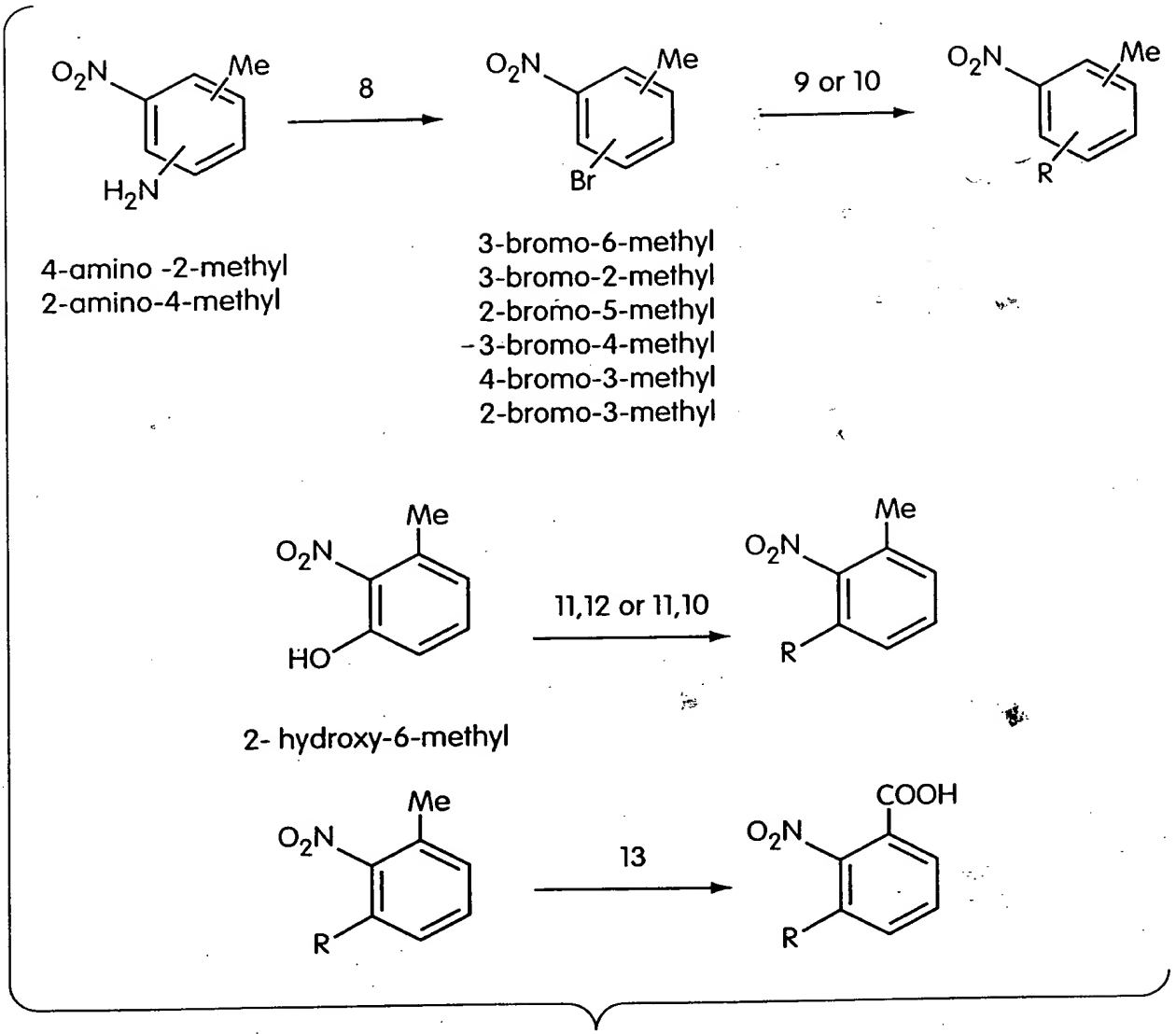
O2N
Me
H2N
8
Br
9 or 10
R
4-amino -2-methyl
2-amino-4-methyl
3-bromo-6-methyl
3-bromo-2-methyl
2-bromo-5-methyl
3-bromo-4-methyl
4-bromo-3-methyl
2-bromo-3-methyl
HO
11,12 or 11,10
2- hydroxy-6-methyl
13
COOH

Fig. 1

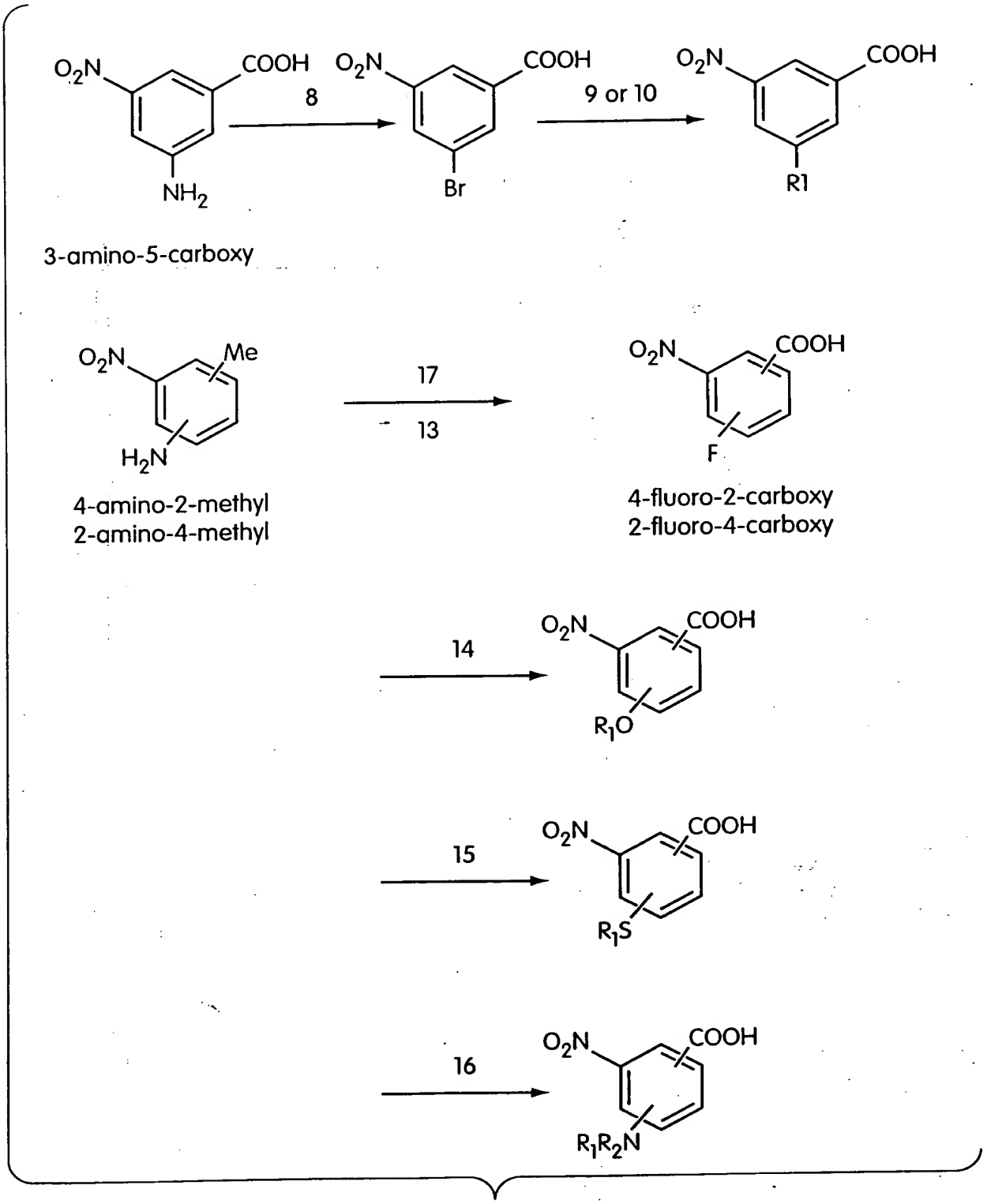
O2N
COOH
NH2
8
Br
9 or 10
R1
3-amino-5-carboxy
Me
H2N
17
13
F
4-amino-2-methyl
2-amino-4-methyl
4-fluoro-2-carboxy
2-fluoro-4-carboxy
14
R1O
15
R1S
16
R1R2N

Fig. 2

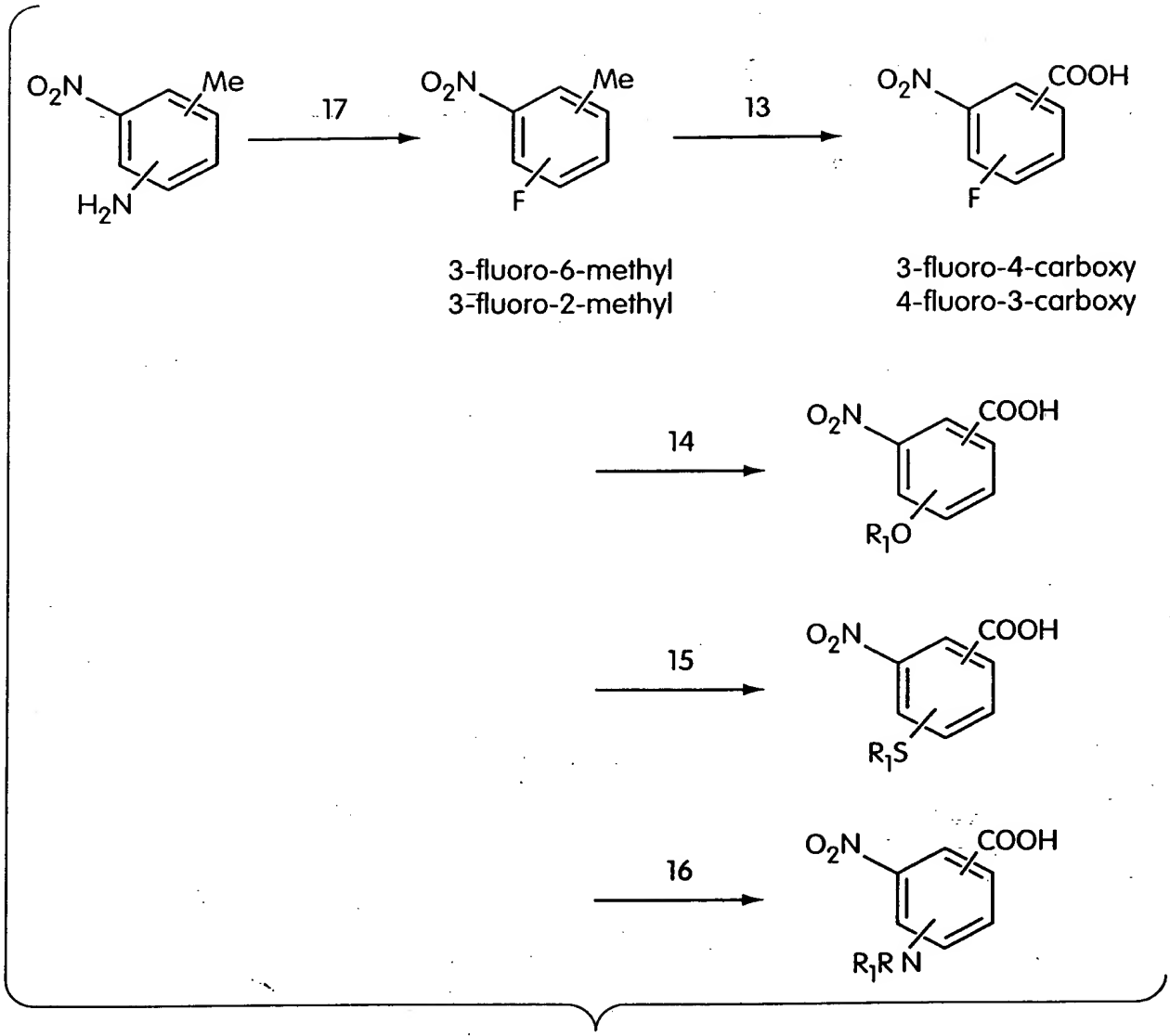
O2N
Me
H2N
17
F
3-fluoro-6-methyl
3-fluoro-2-methyl
13
COOH
3-fluoro-4-carboxy
4-fluoro-3-carboxy
14
R1O
15
R1S
16
R1R N

Fig. 3

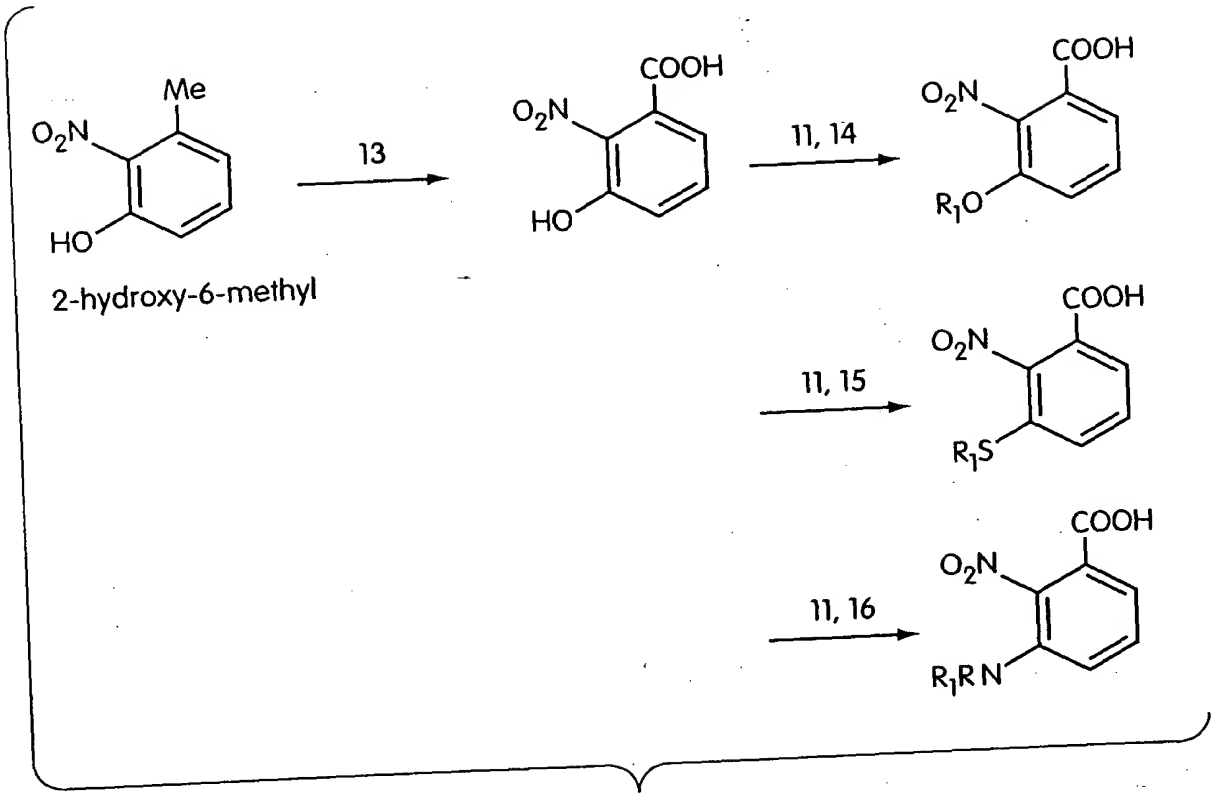
Me
O_2N
HO
2-hydroxy-6-methyl
13
COOH
O_2N
HO
11, 14
COOH
O_2N
R_1O
11, 15
COOH
O_2N
R_1S
11, 16
COOH
O_2N
R_1RN

Fig. 4

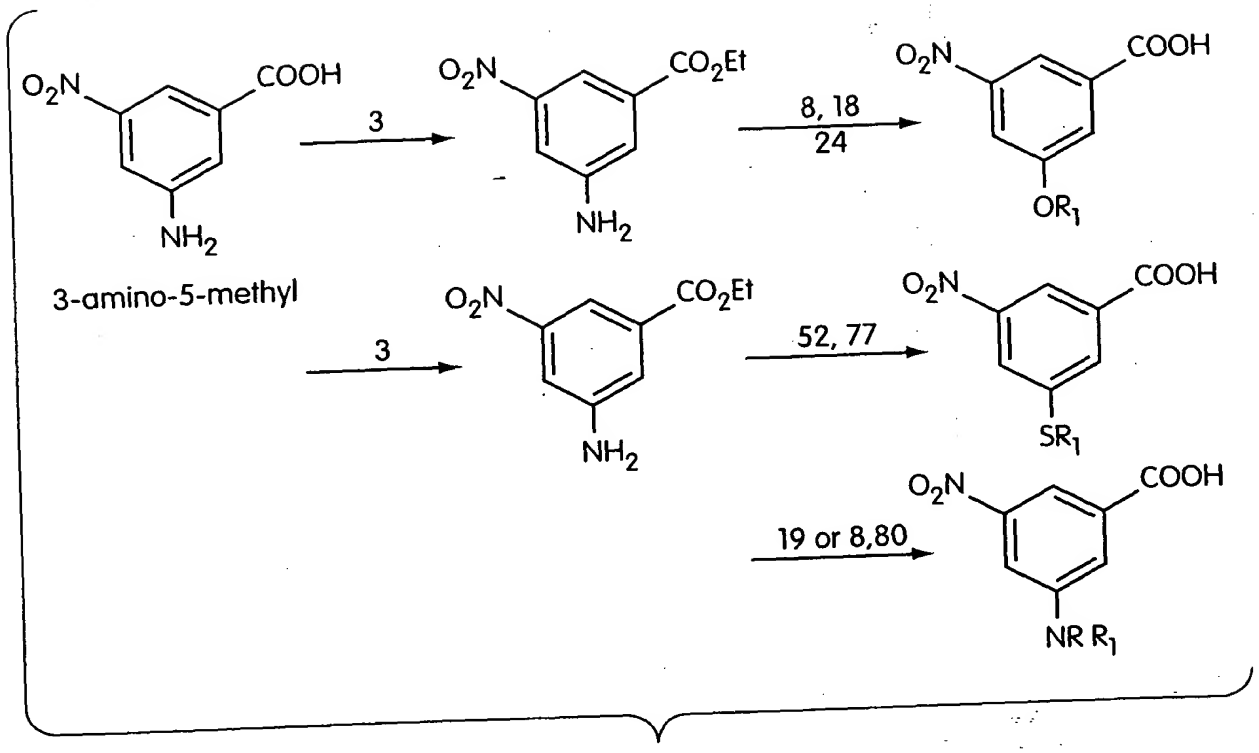
O2N
COOH
NH2
3-amino-5-methyl
3
CO2Et
8, 18
24
OR1
52, 77
SR1
19 or 8,80
NR R1

Fig. 5

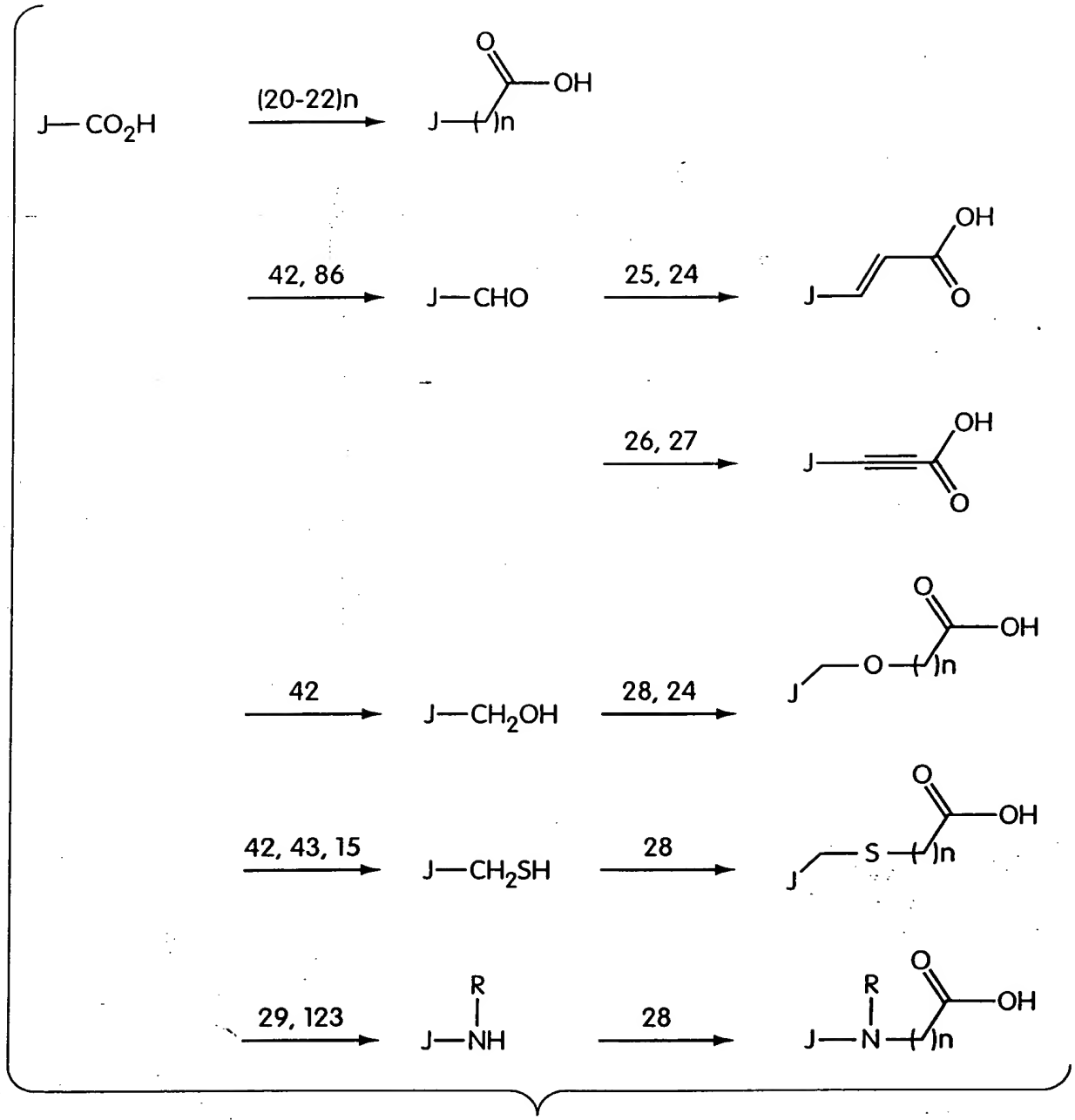
J—CO2H
(20-22)n
J—( )n
O
OH
42, 86
J—CHO
25, 24
J
OH
O
26, 27
42
J—CH2OH
28, 24
O—( )n
42, 43, 15
J—CH2SH
28
S—( )n
29, 123
R
J—NH
N—( )n

Fig. 6

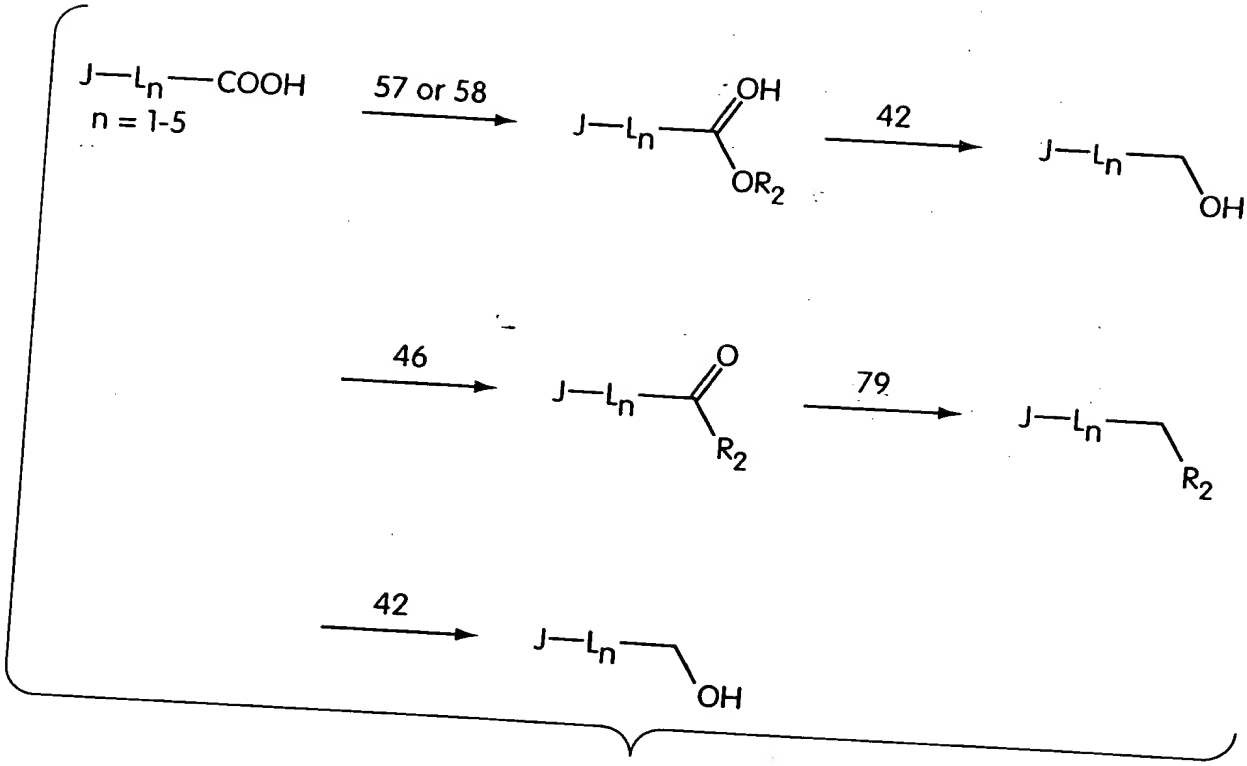
J—Ln—COOH
n = 1-5
57 or 58
OH
J—Ln
OR2
42
J—Ln
OH
46
O
J—Ln
R2
79
J—Ln
R2
42
J—Ln
OH

Fig. 7

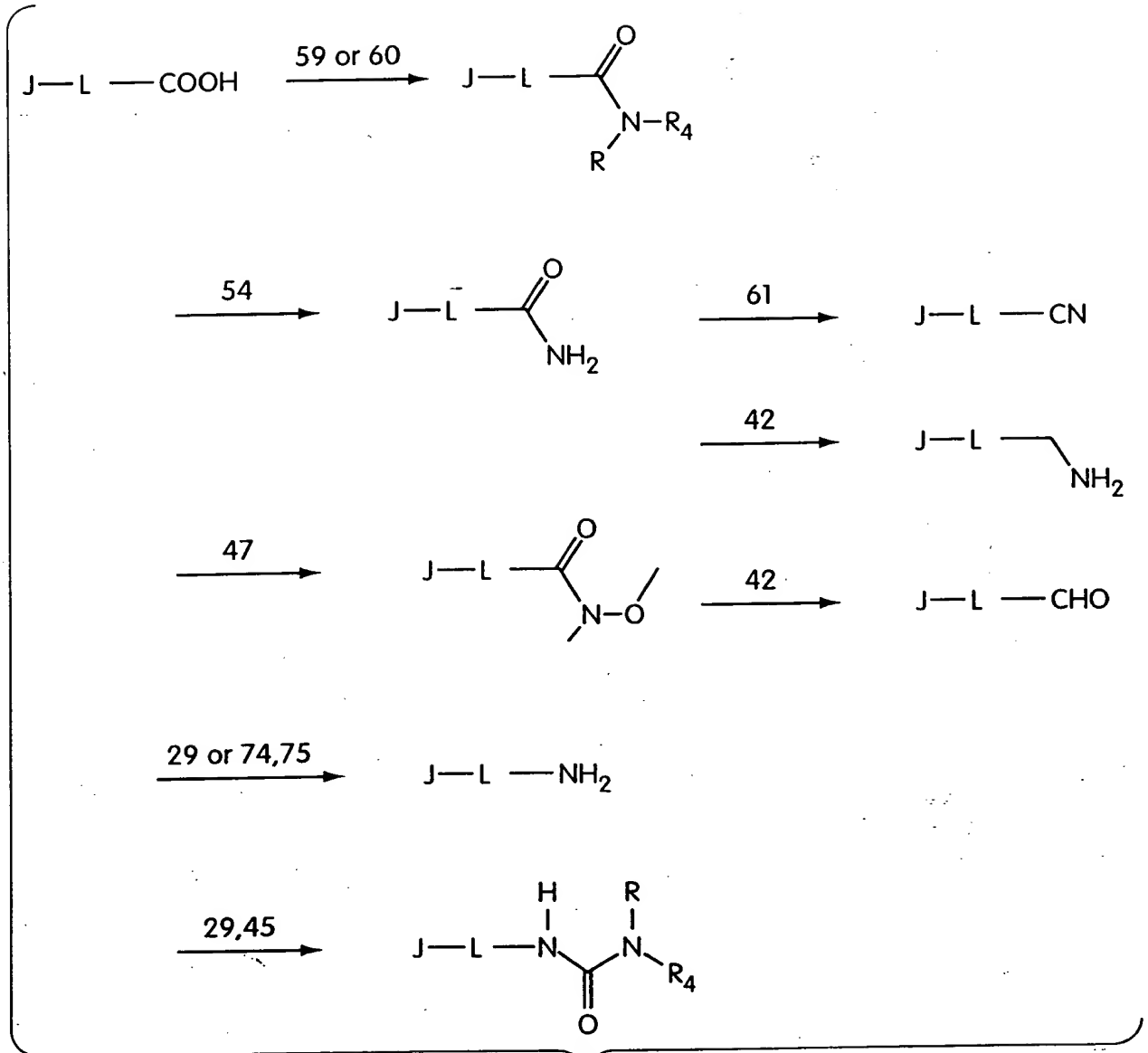
J—L—COOH
59 or 60
J—L
O
N—R4
R
54
J—L
O
NH2
61
J—L—CN
42
J—L
NH2
47
J—L
O
N—O
42
J—L—CHO
29 or 74,75
J—L—NH2
29,45
H
R
J—L—N
N
R4
O

Fig. 8

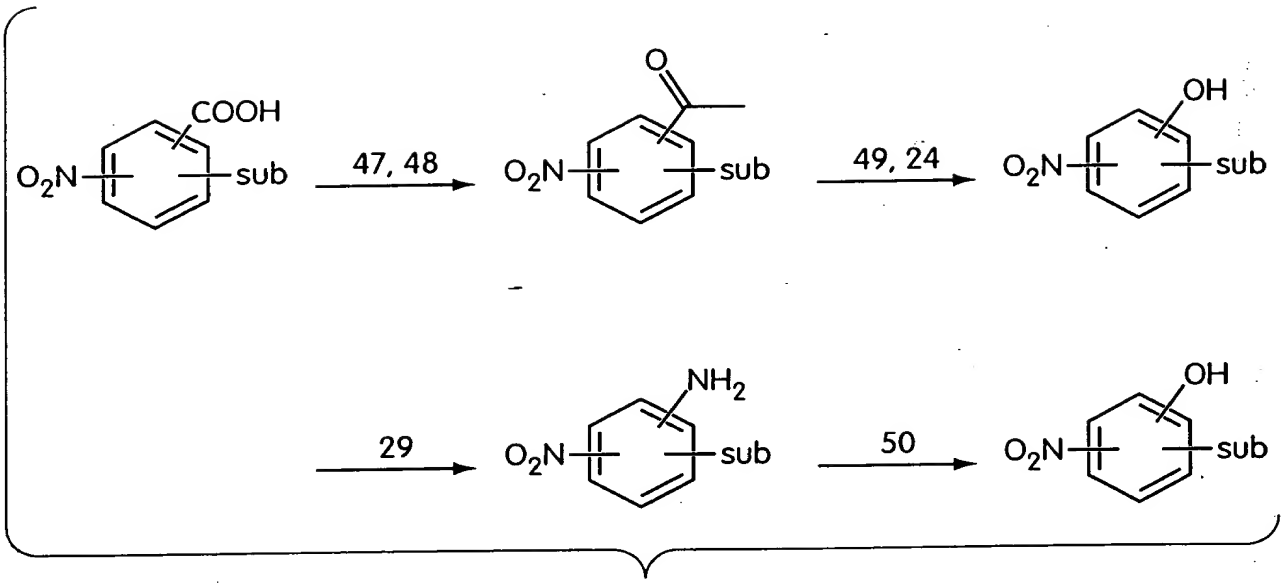

Fig. 9

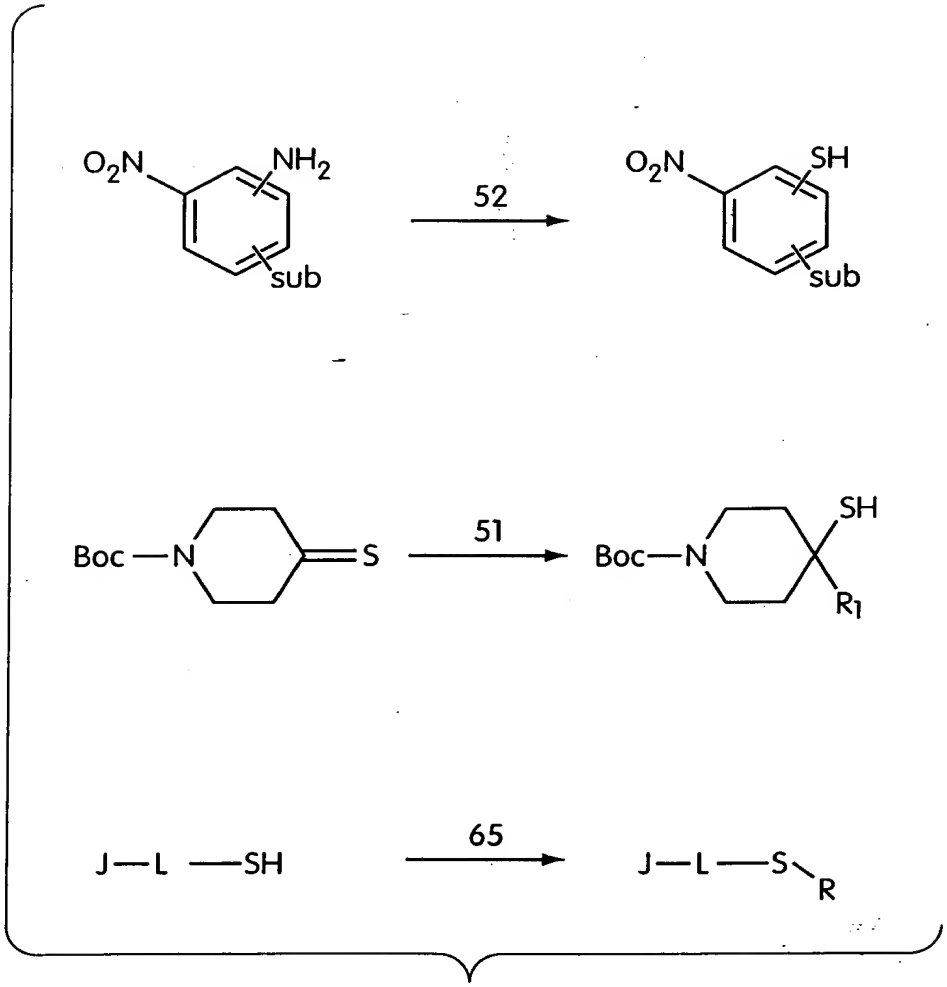

Fig. 10

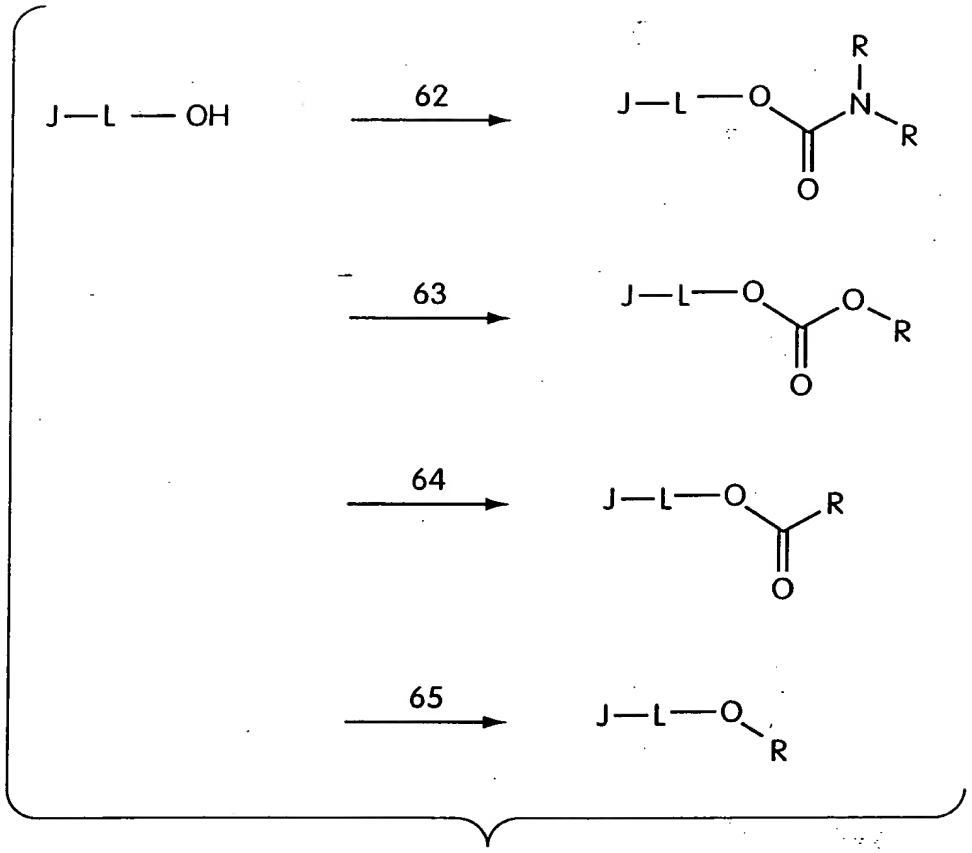

Fig. 11

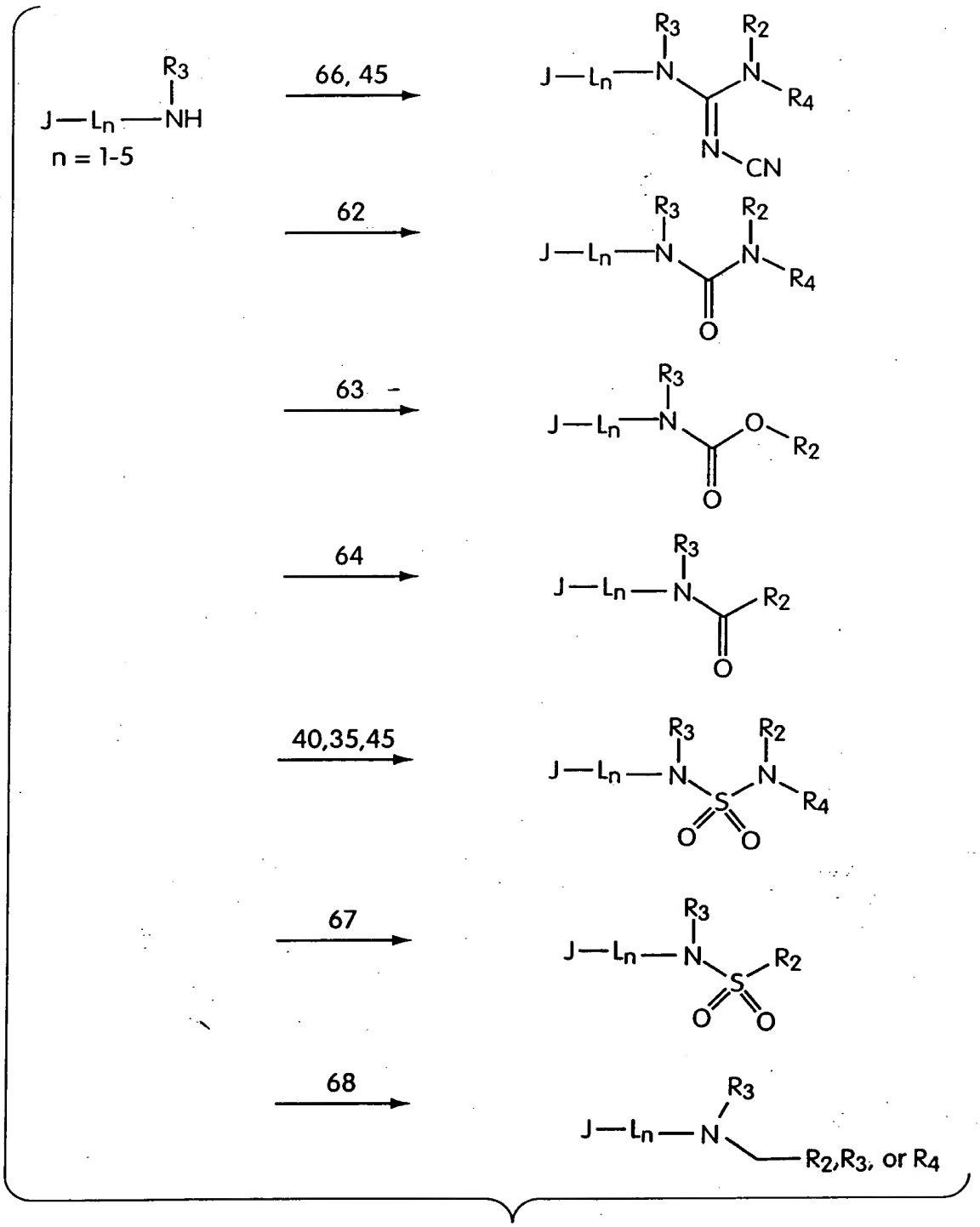

Fig. 12

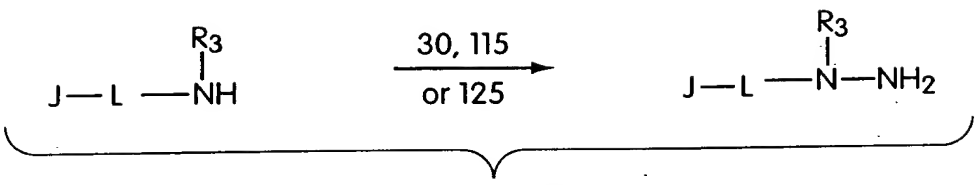

Fig. 13

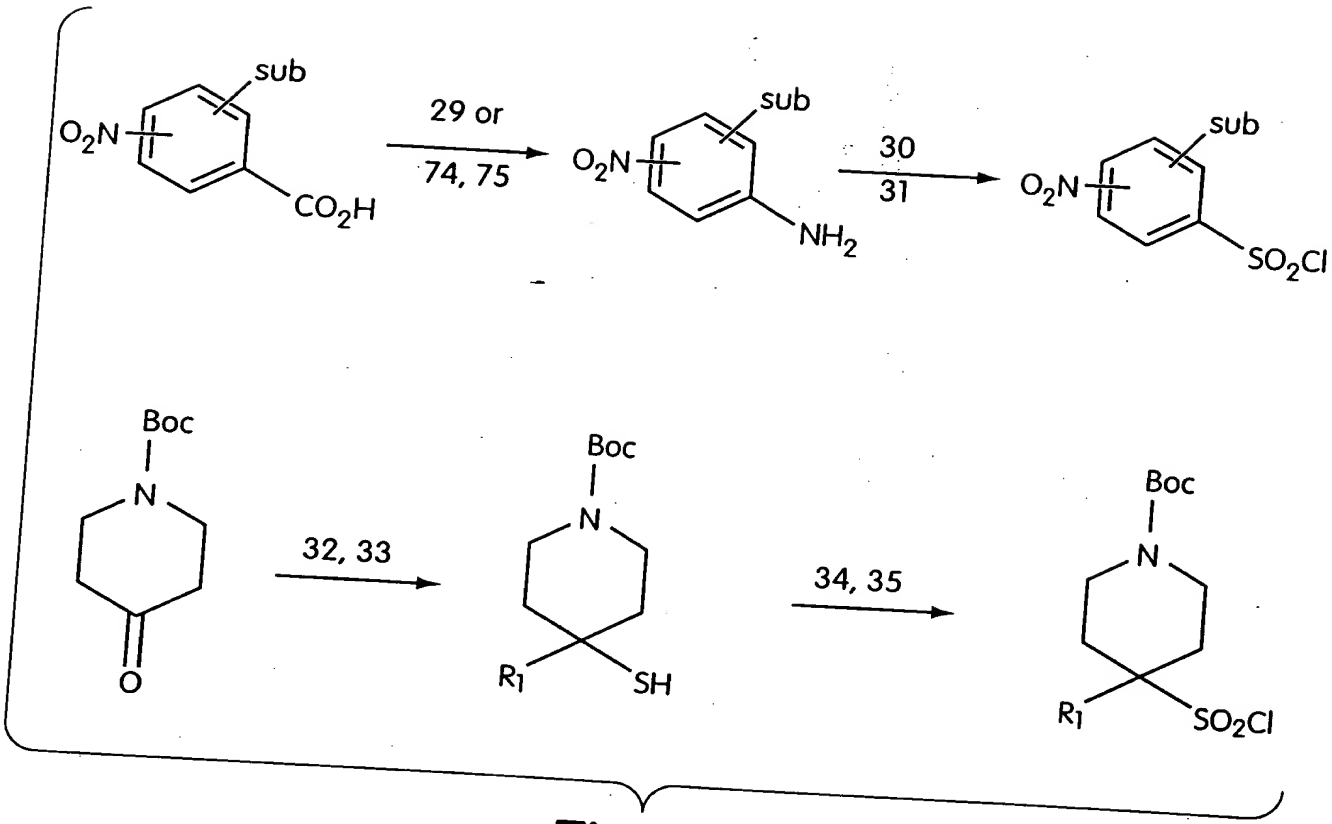
sub
O_2N
CO_2H
29 or
74, 75
sub
O_2N
NH_2
30
31
sub
O_2N
SO_2Cl
Boc
N
O
32, 33
Boc
N
R_1
SH
34, 35
Boc
N
R_1
SO_2Cl

Fig. 14

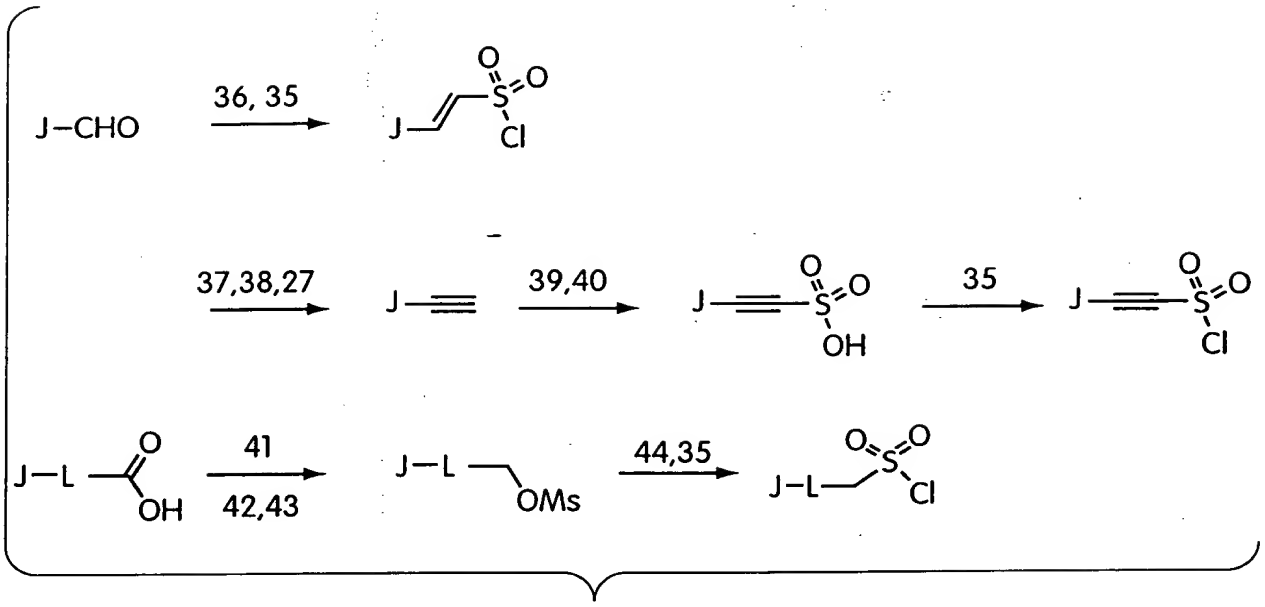
J–CHO
36, 35
J
O
S
O
Cl
37,38,27
J
39,40
J
O
S
O
OH
35
J
O
S
O
Cl
J–L
O
OH
41
42,43
J–L
OMs
44,35
J–L
O
S
O
Cl

Fig. 15

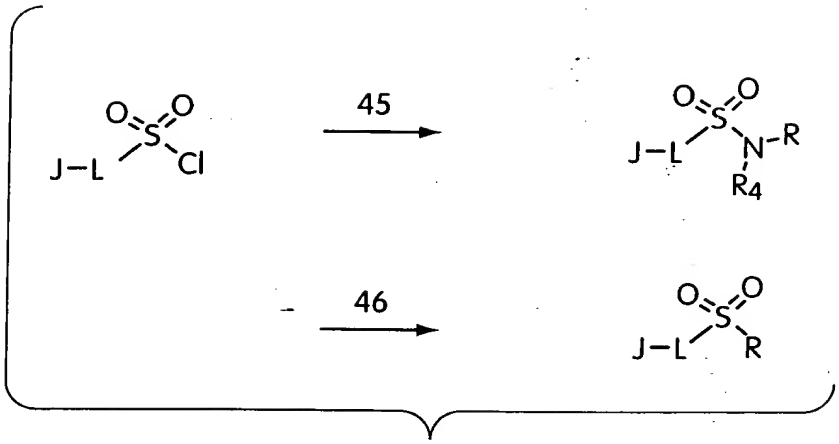

Fig. 16

J-L =

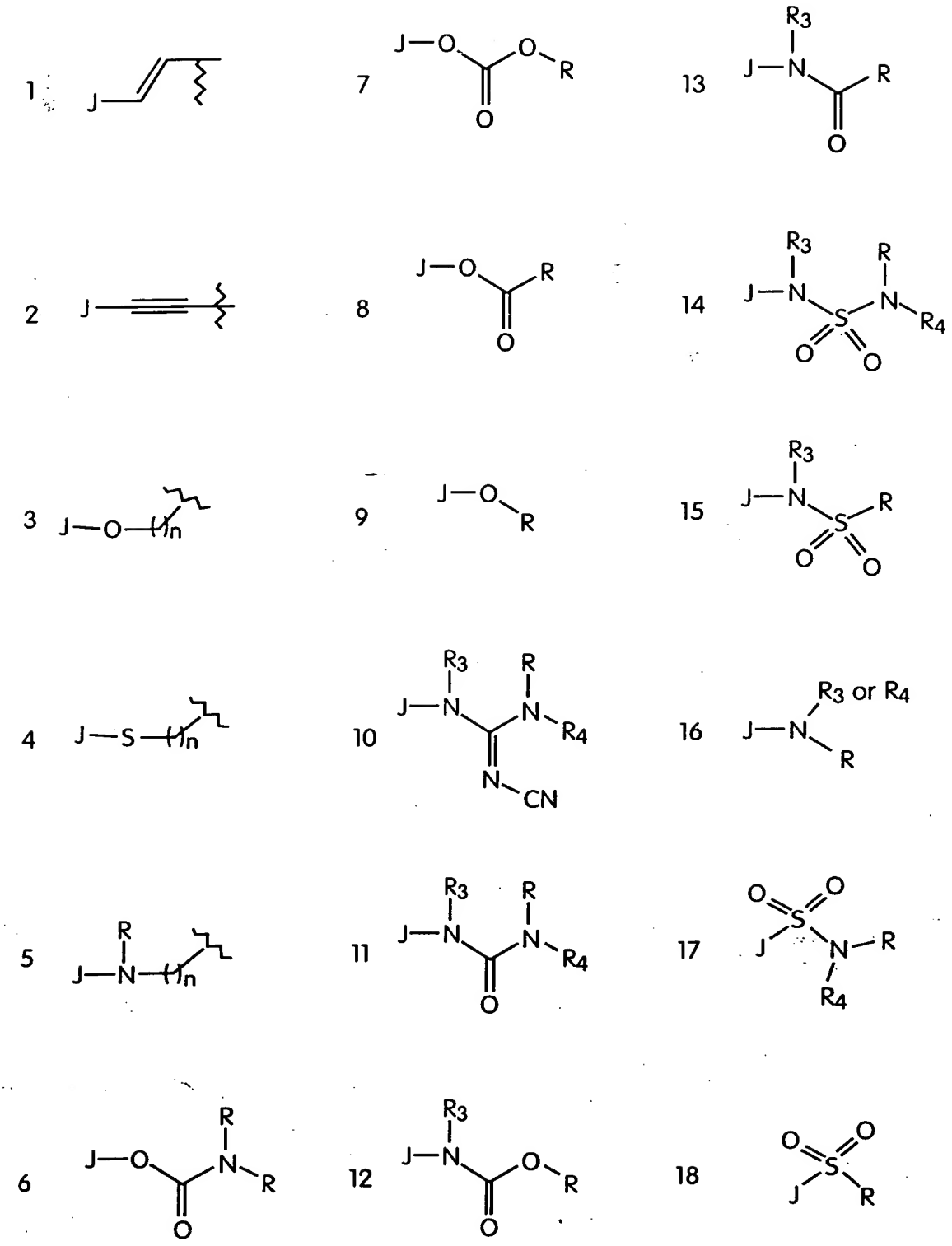

Fig. 17

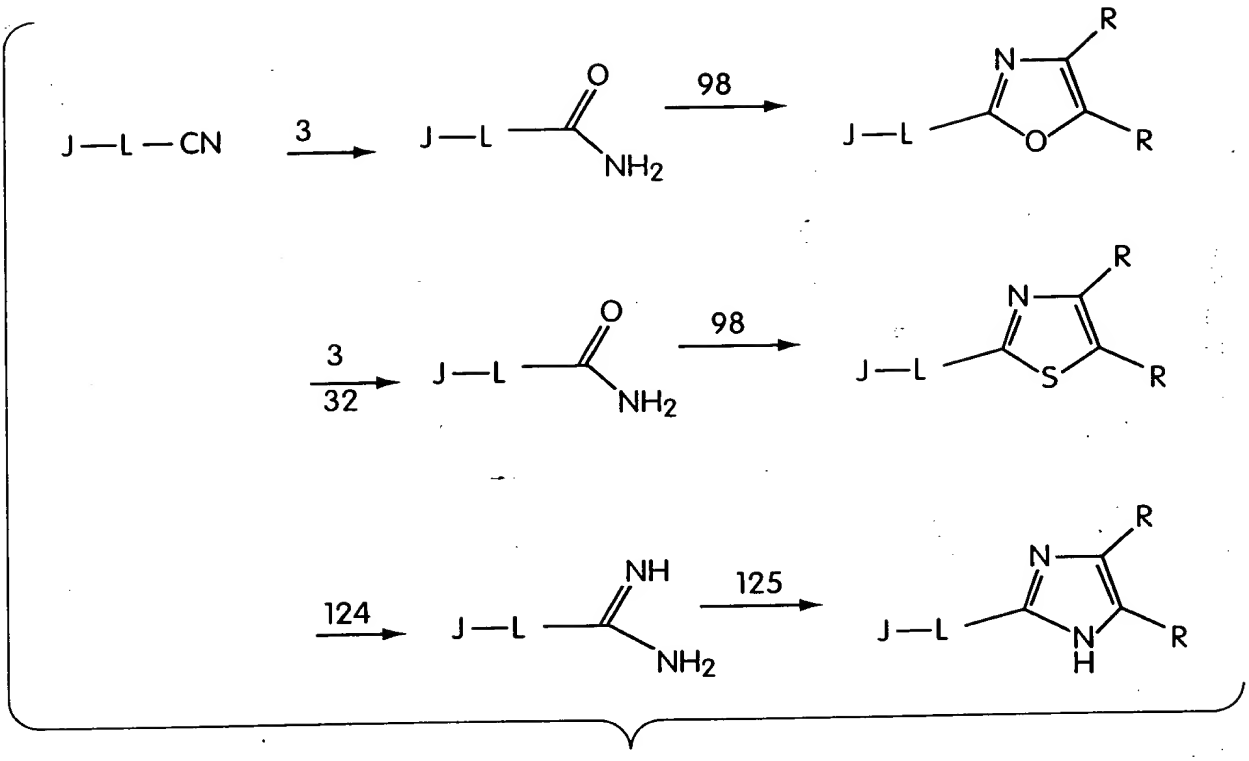

Fig. 18

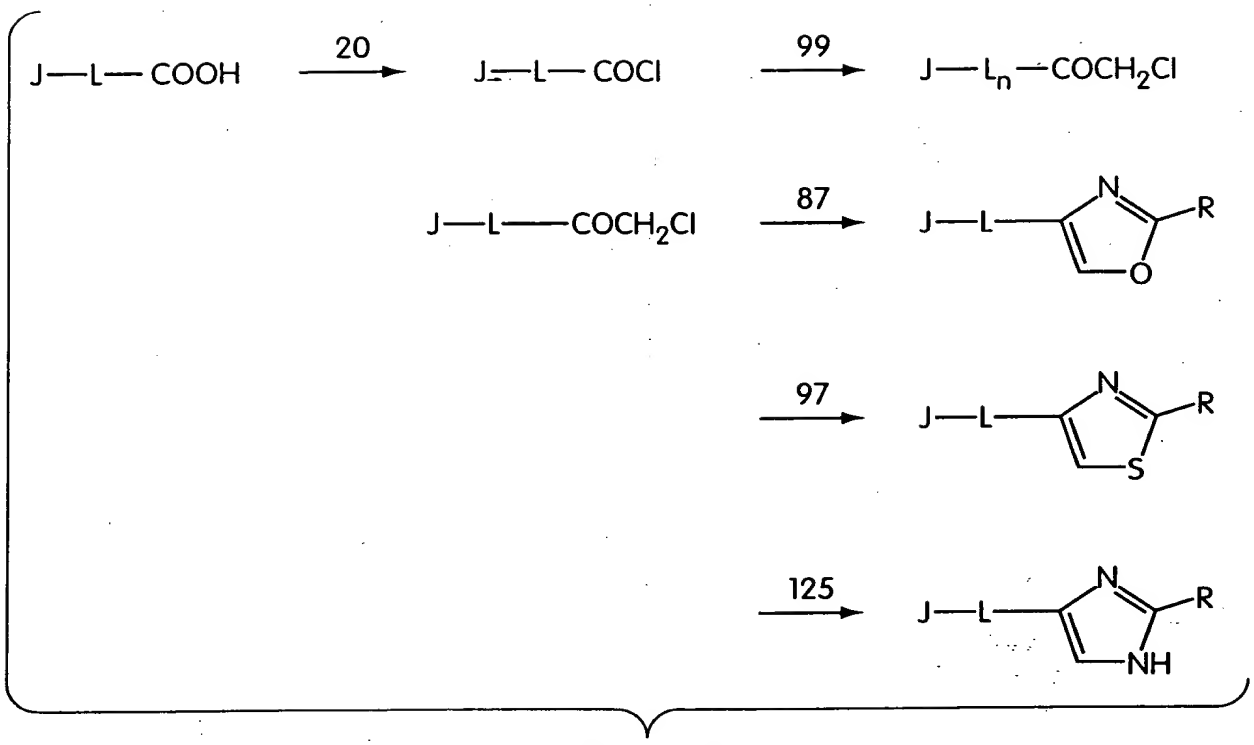

Fig. 19

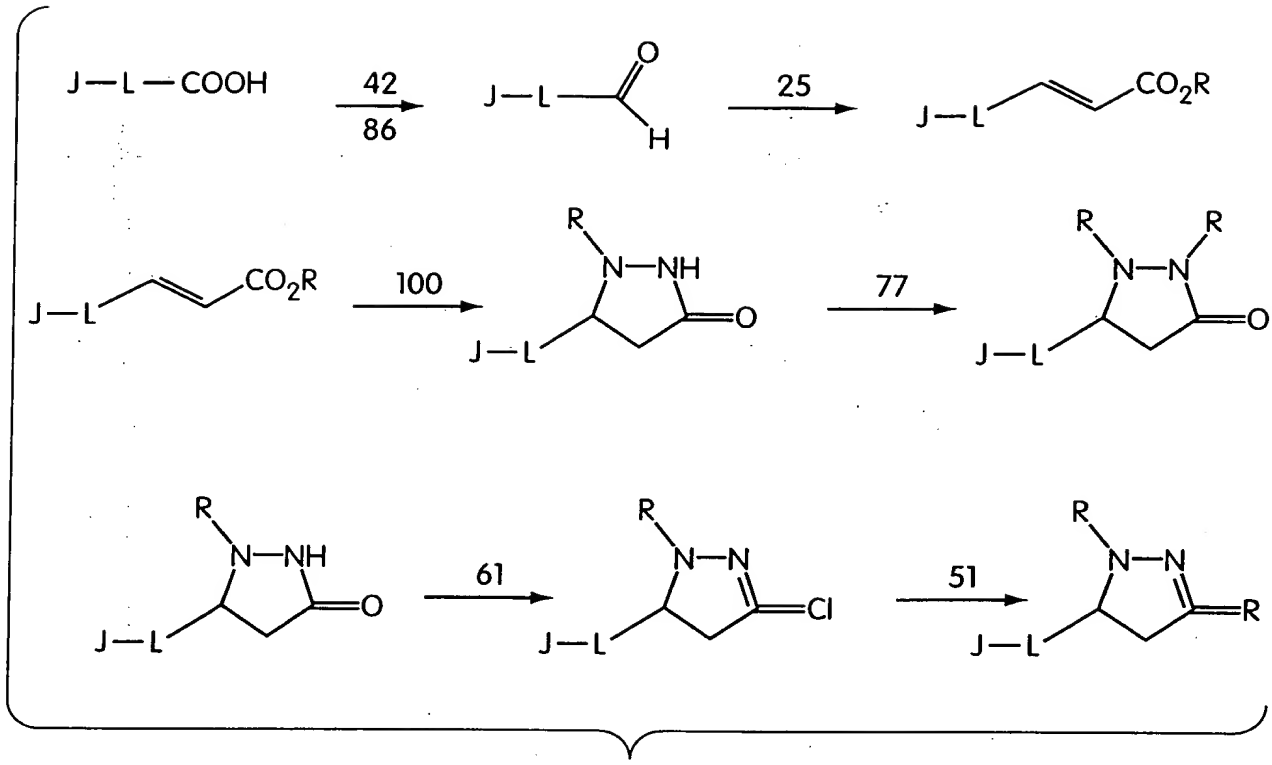
J—L—COOH
42
86
J—L
O
H
25
J—L
CO2R
CO2R
J—L
100
R
N—NH
O
J—L
77
R
R
N—N
O
J—L
R
N—NH
O
J—L
61
R
N—N
Cl
J—L
51
R
N—N
R
J—L

Fig. 20

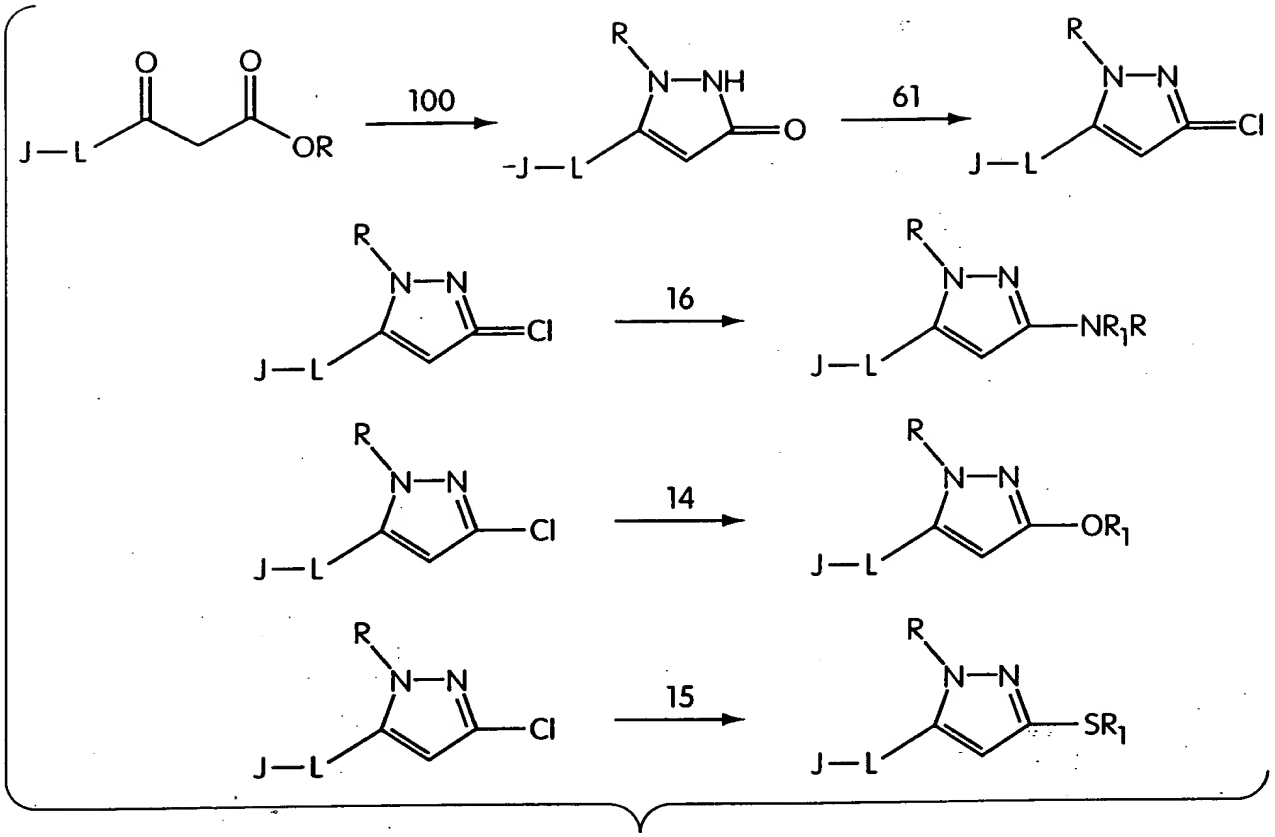

Fig. 21

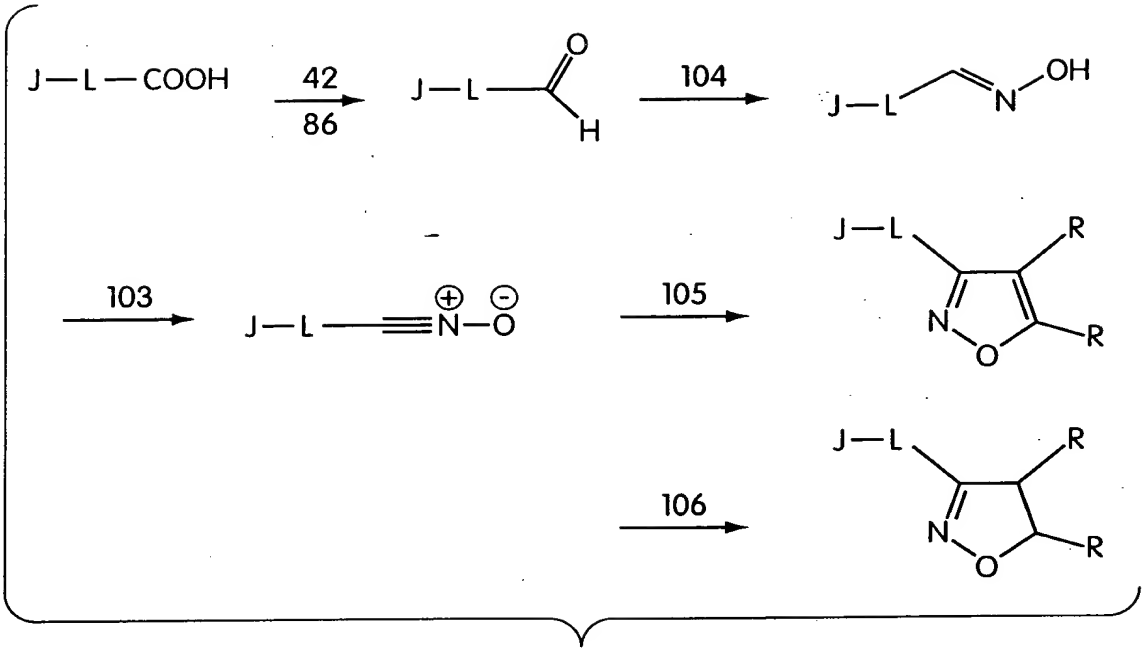

Fig. 22

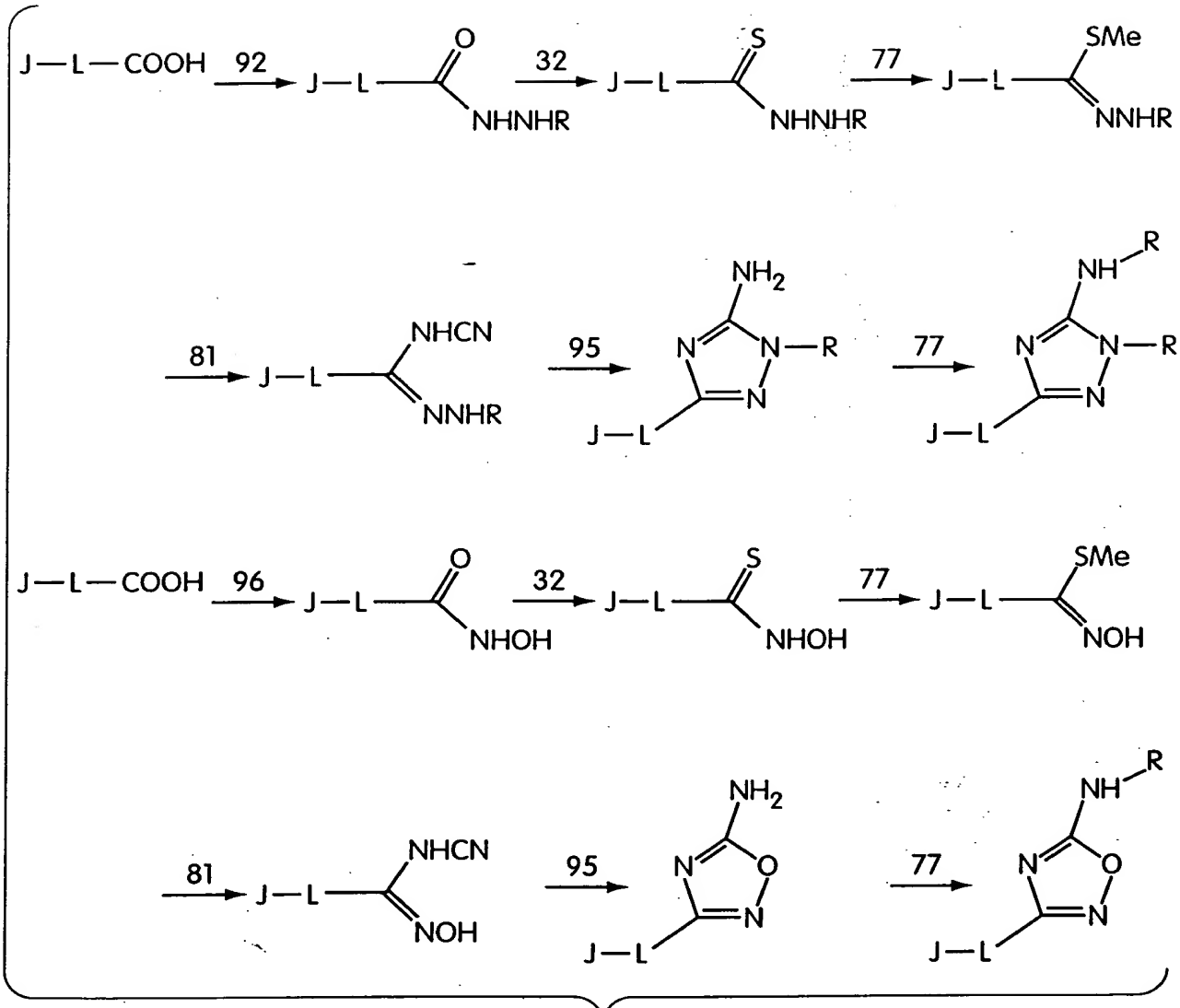
J—L—COOH
92
J—L
O
NHNHR
32
S
77
SMe
NNHR
81
NHCN
95
NH2
N
R
J—L—COOH
96
NHOH
NOH
O

Fig. 23

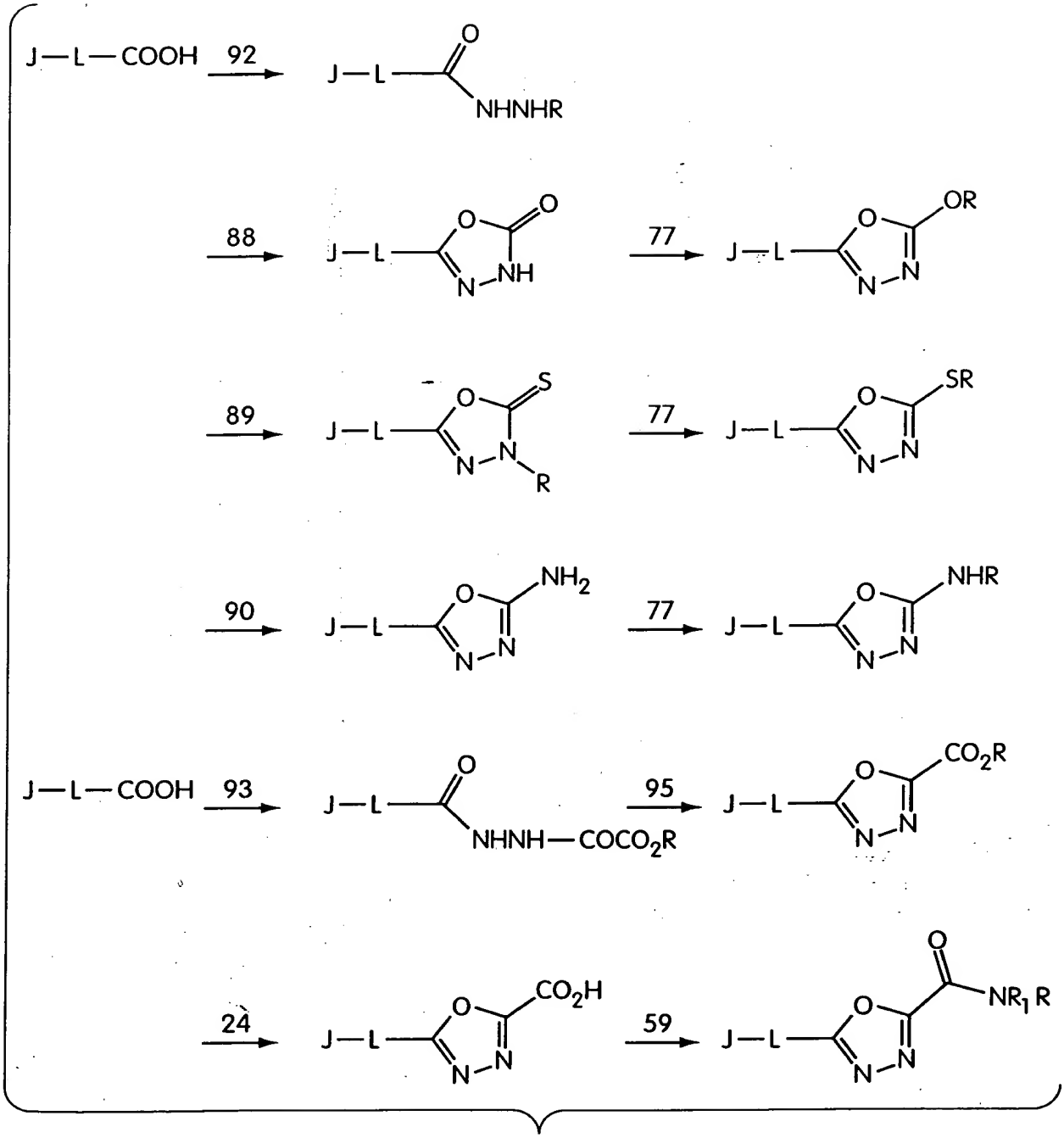
J—L—COOH
92
J—L
O
NHNHR
88
O
O
NH
77
OR
89
S
N
R
SR
90
NH2
NHR
93
NHNH—COCO2R
95
CO2R
24
CO2H
59
NR1R

Fig. 24

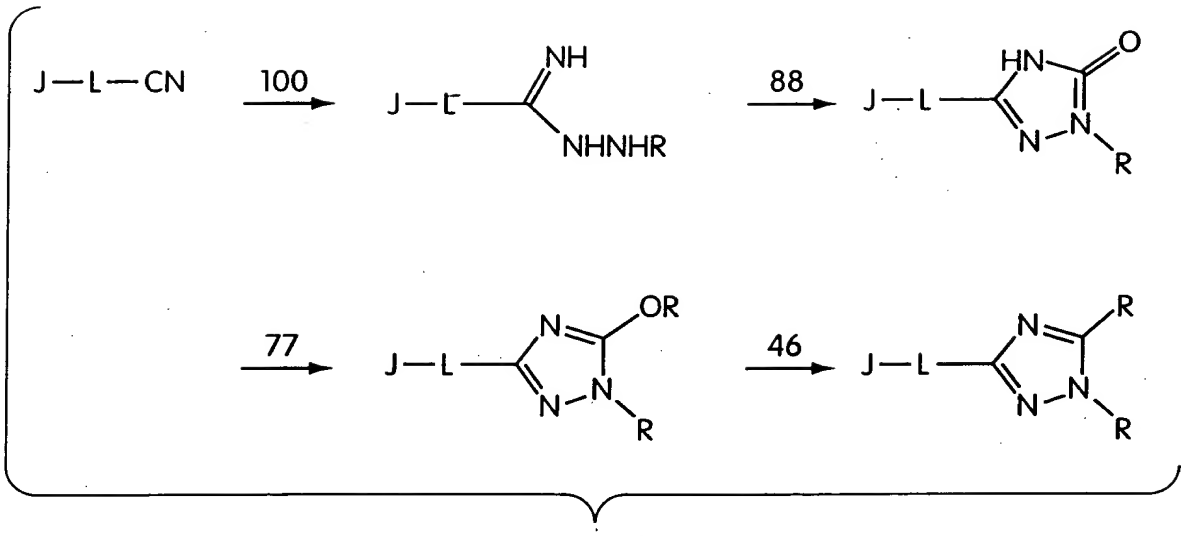

Fig. 25

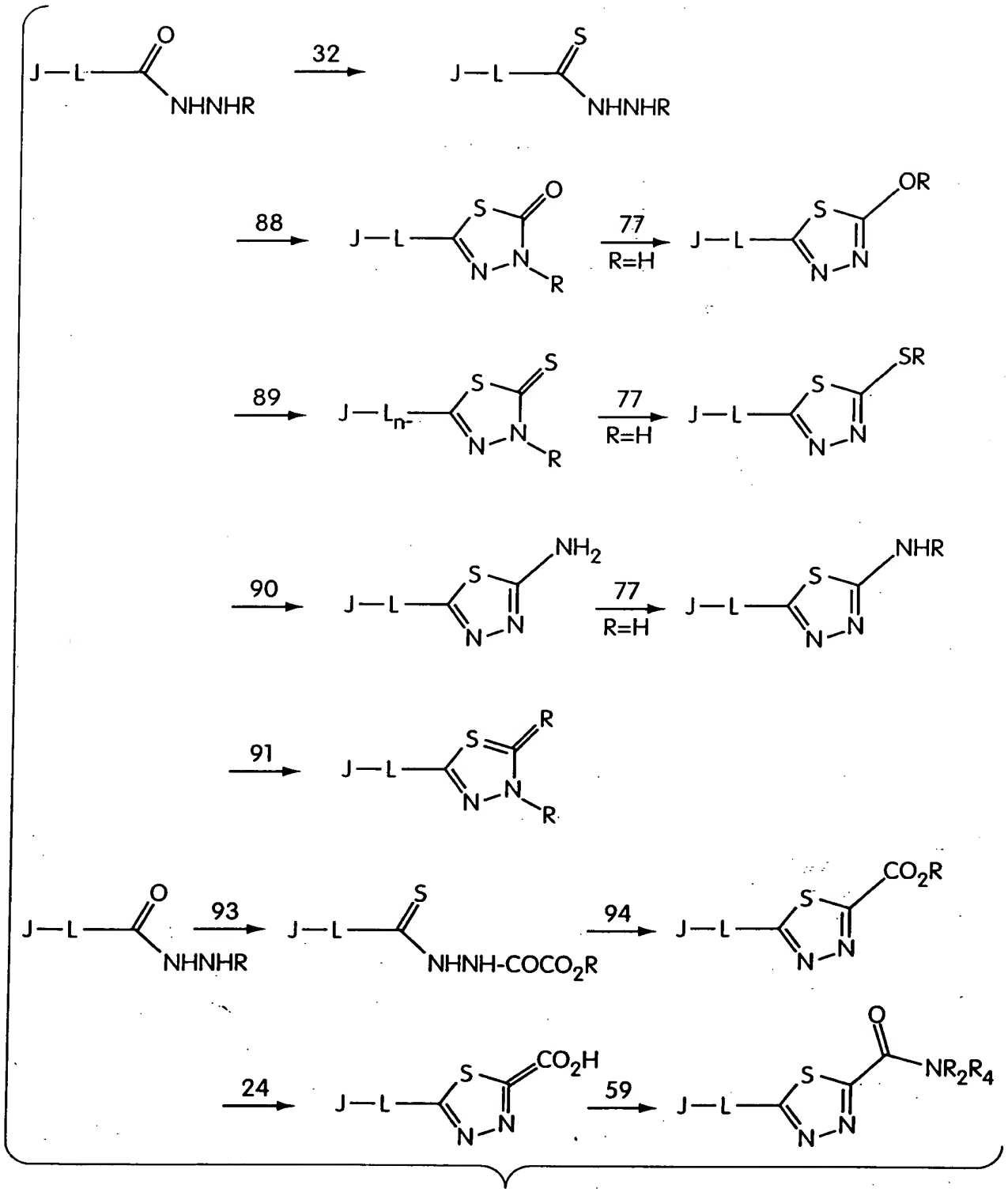
J—L
O
NHNHR
32
S
NHNHR
88
S
O
N
N
R
77
R=H
OR
89
S
S
L_n
SR
90
NH_2
NHR
91
R
93
NHNH-$COCO_2R$
94
CO_2R
24
CO_2H
59
NR_2R_4

Fig. 26

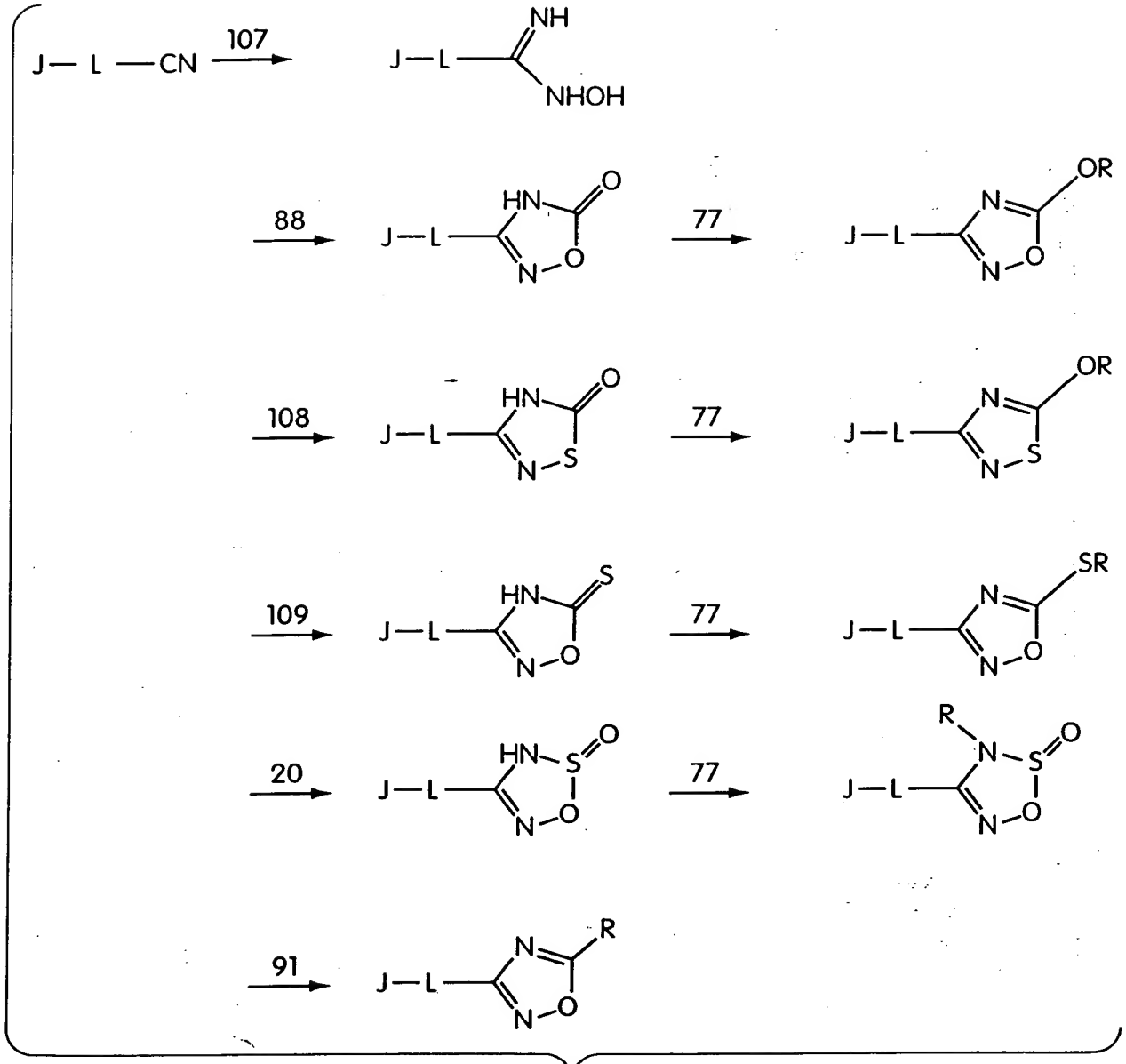

Fig. 27

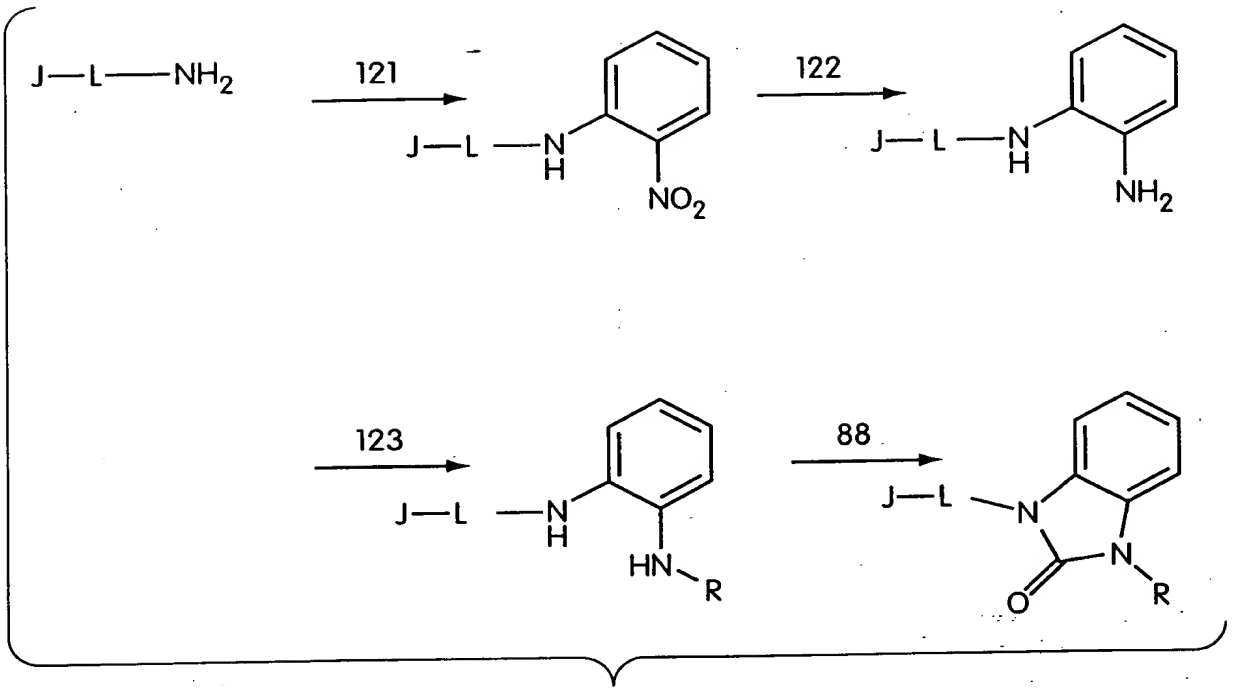

Fig. 28

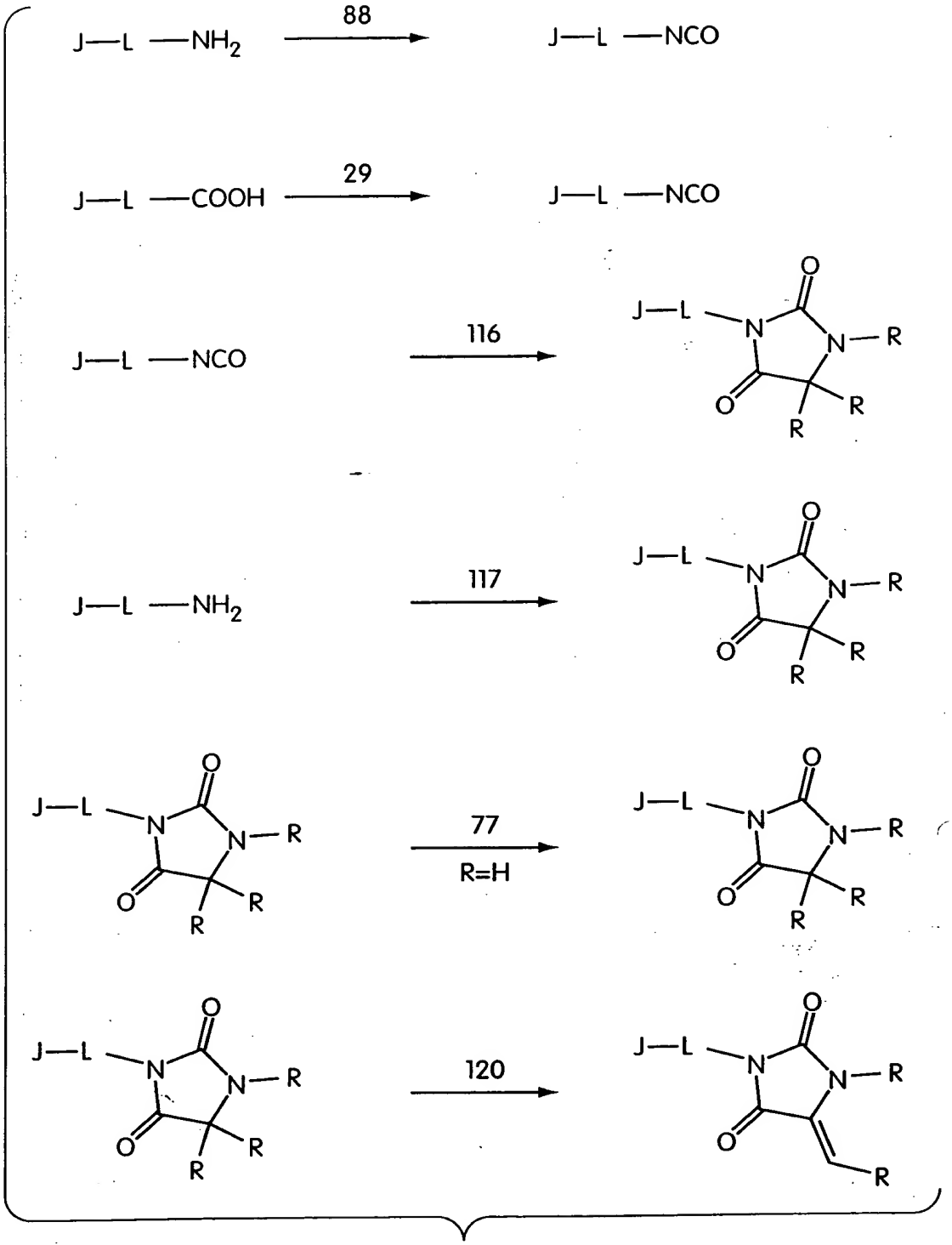

Fig. 29

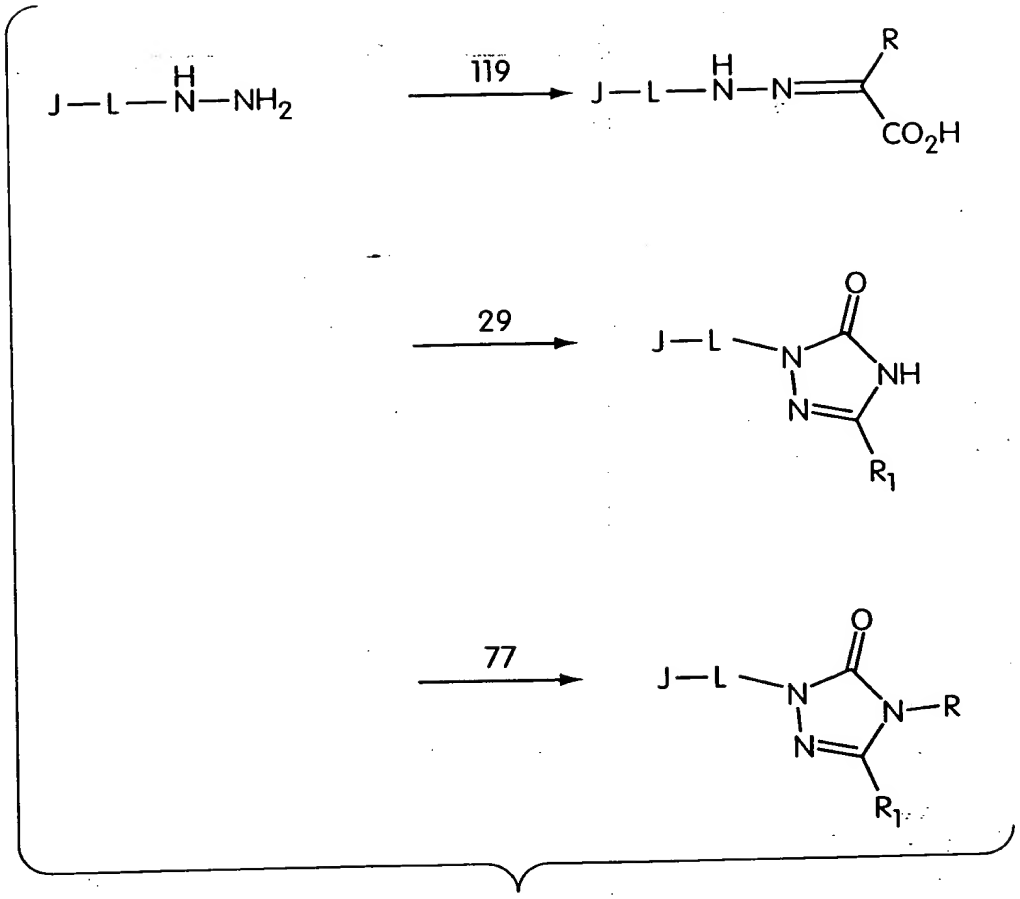

Fig. 30

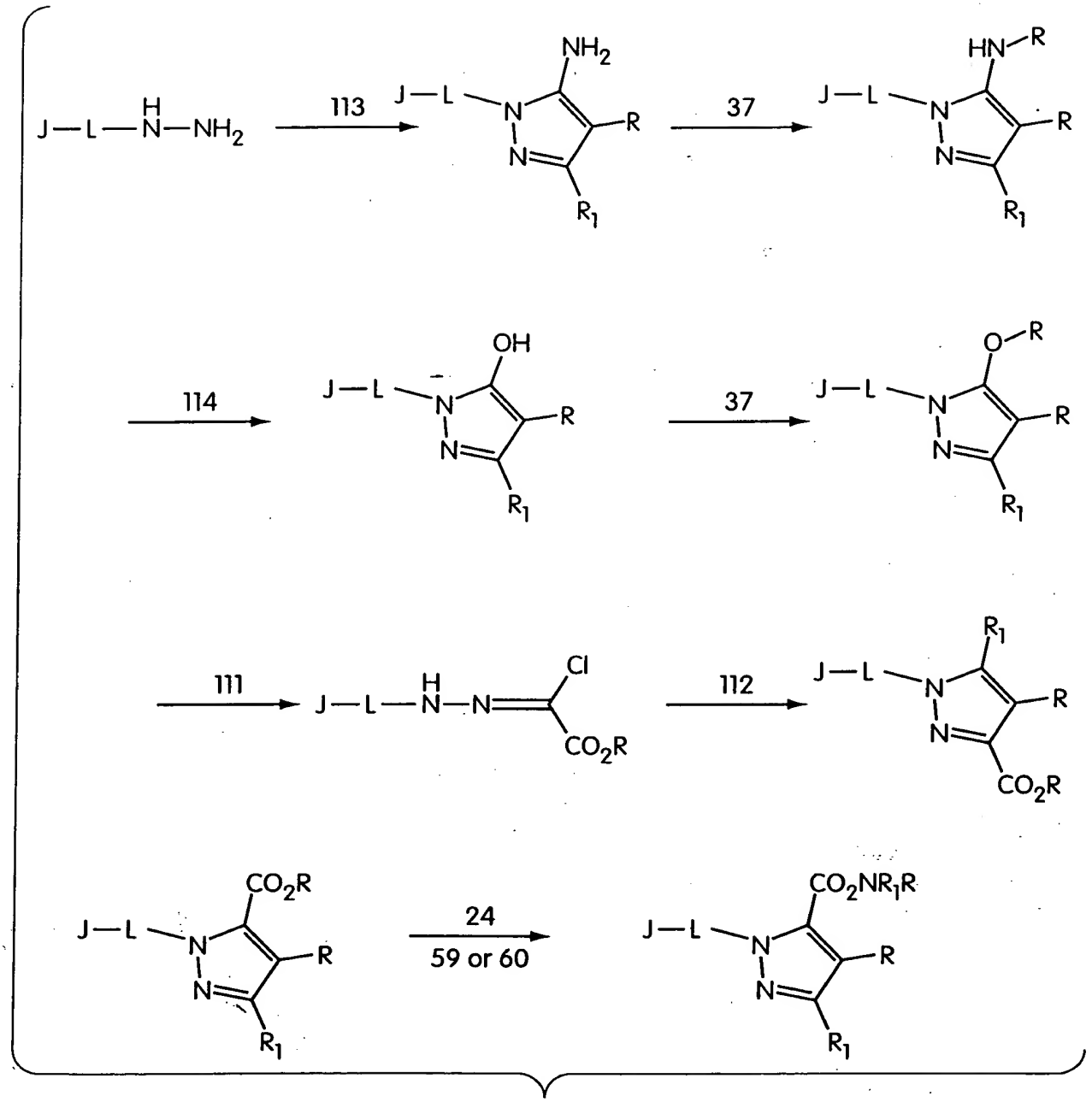
J—L—N(H)—NH2
113
NH2
R
R1
37
HN
114
OH
O
111
Cl
CO2R
112
24
59 or 60
CO2NR1R

Fig. 31

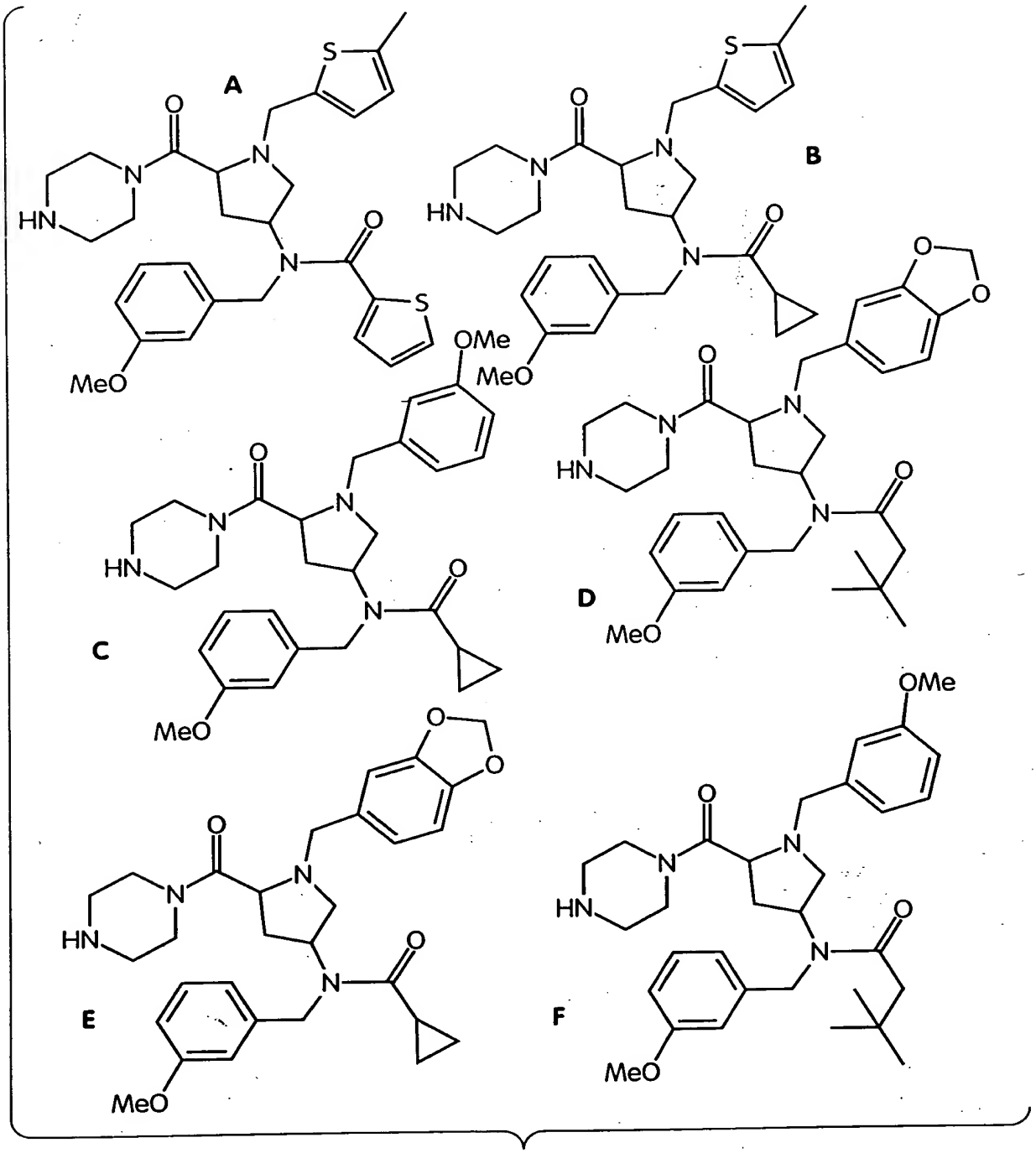

Fig. 32A

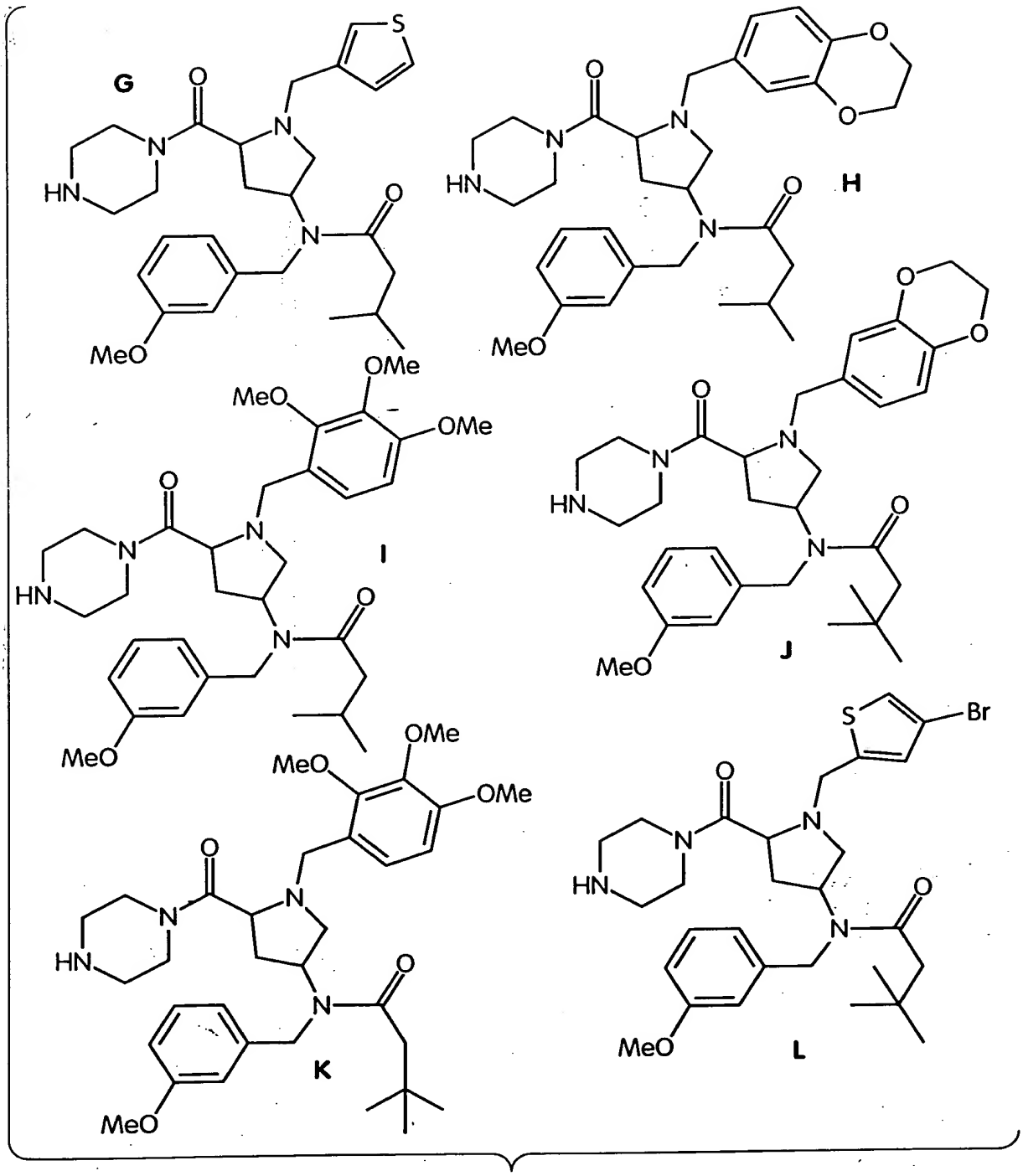

Fig. 32B

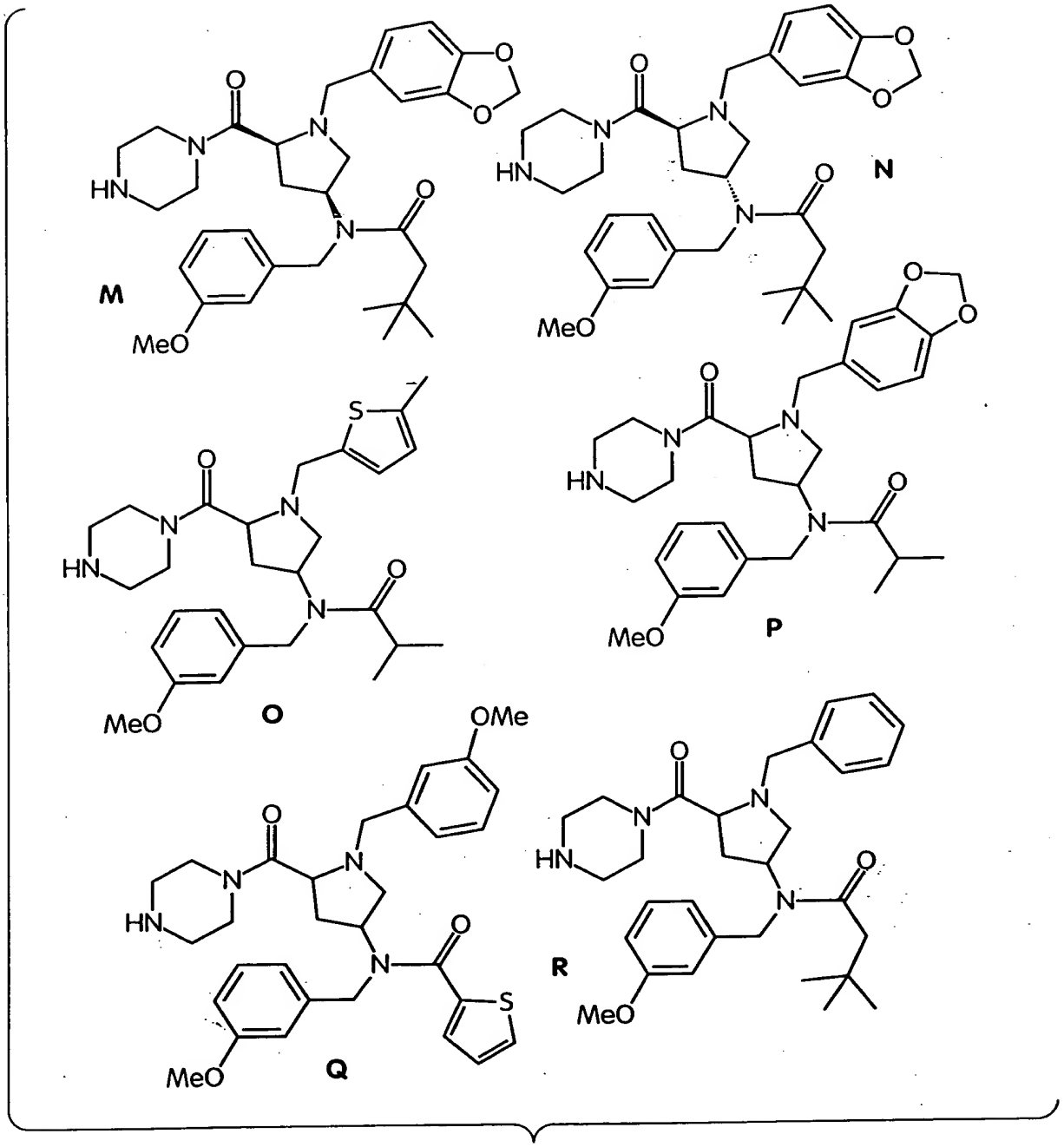

Fig. 32C

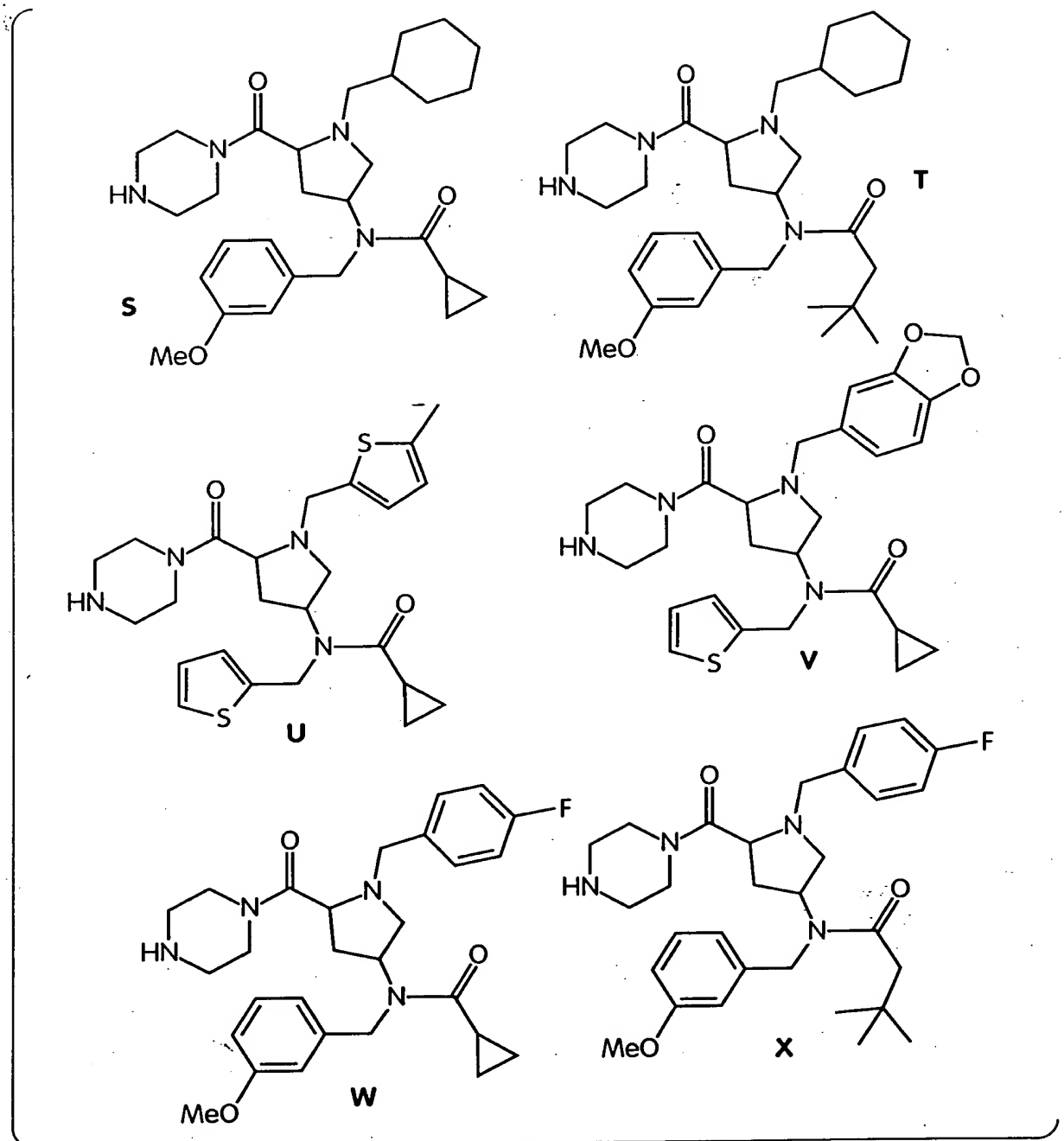

Fig. 32D

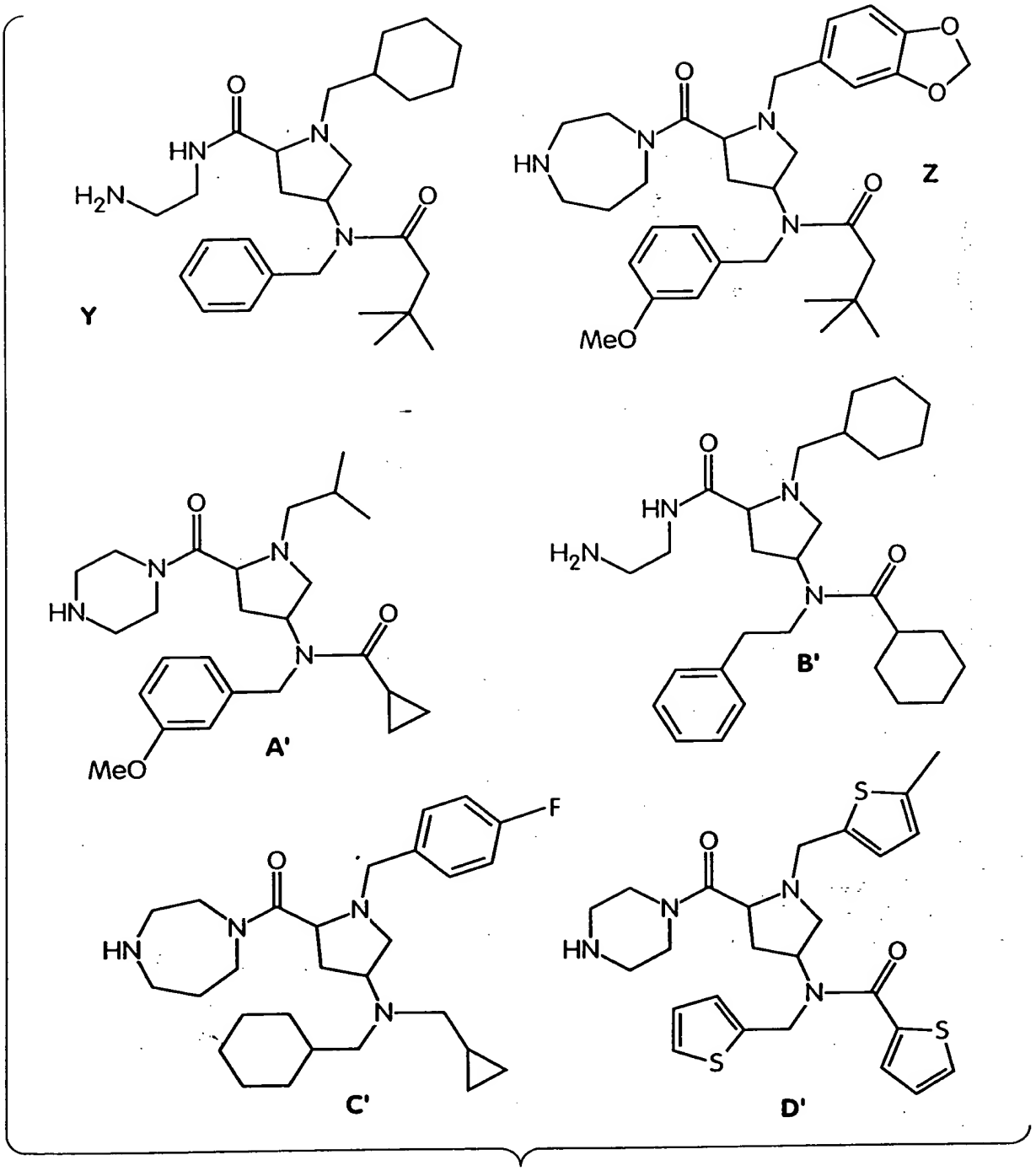

Fig. 32E

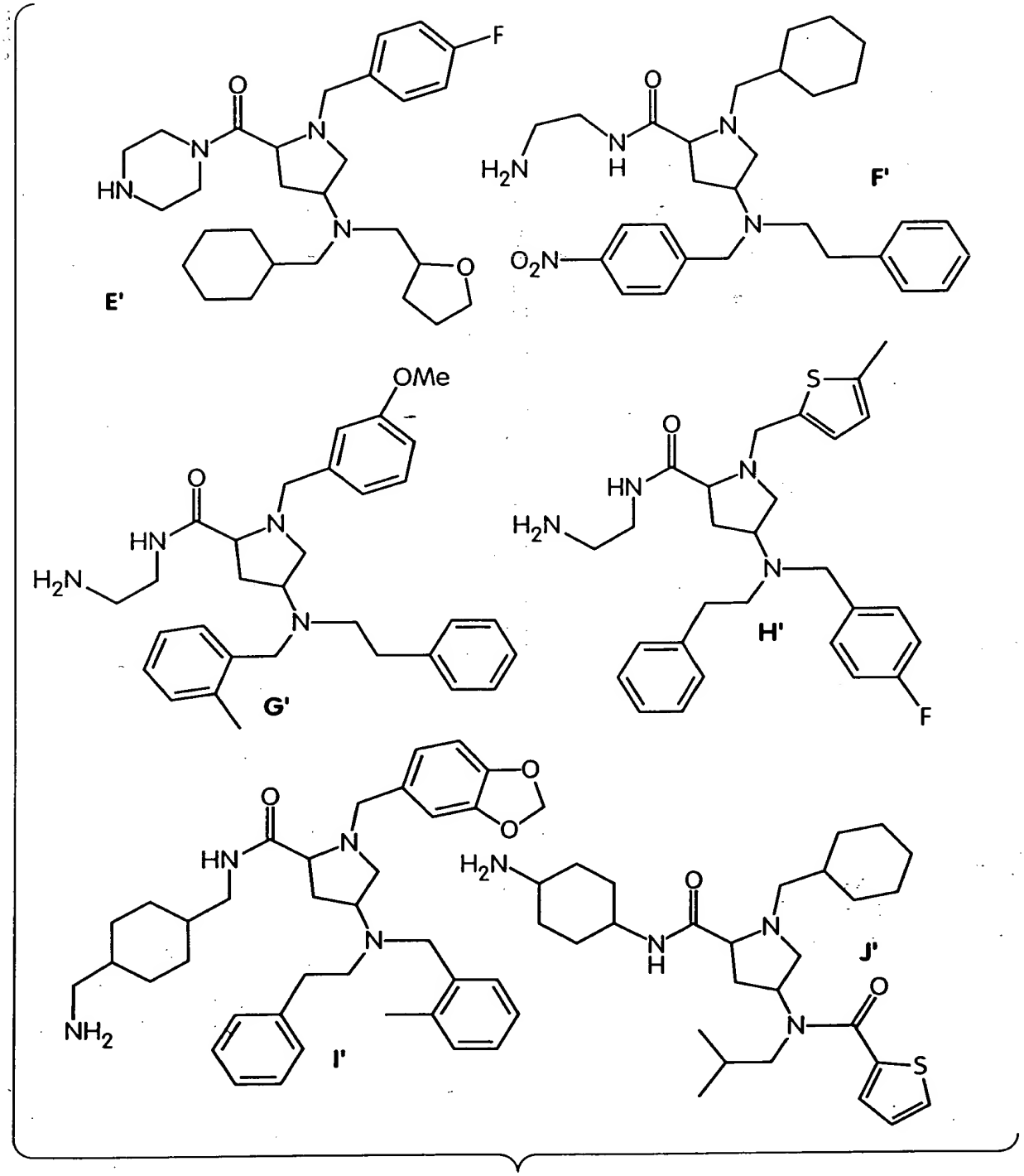

Fig. 32F

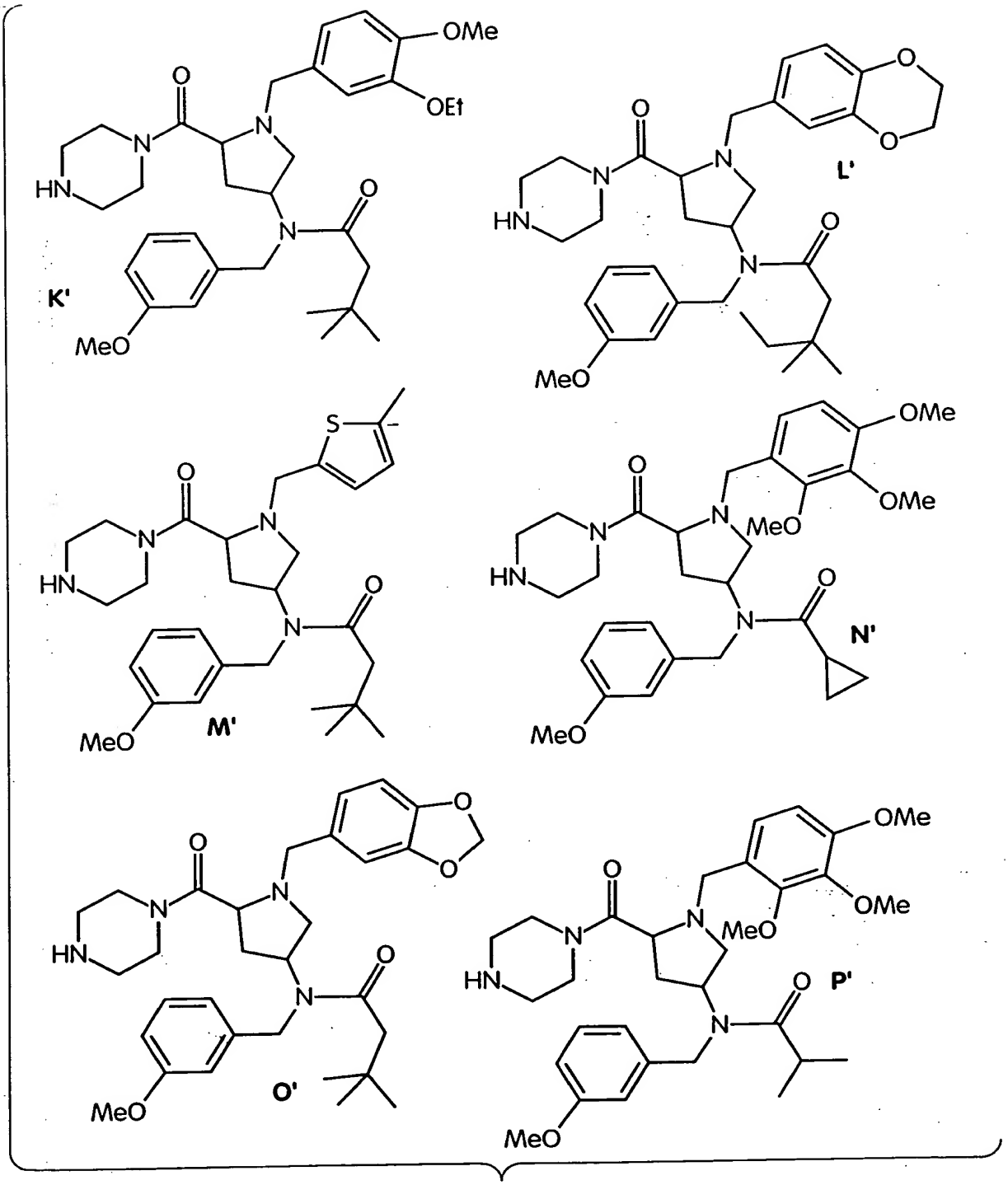

Fig. 32G

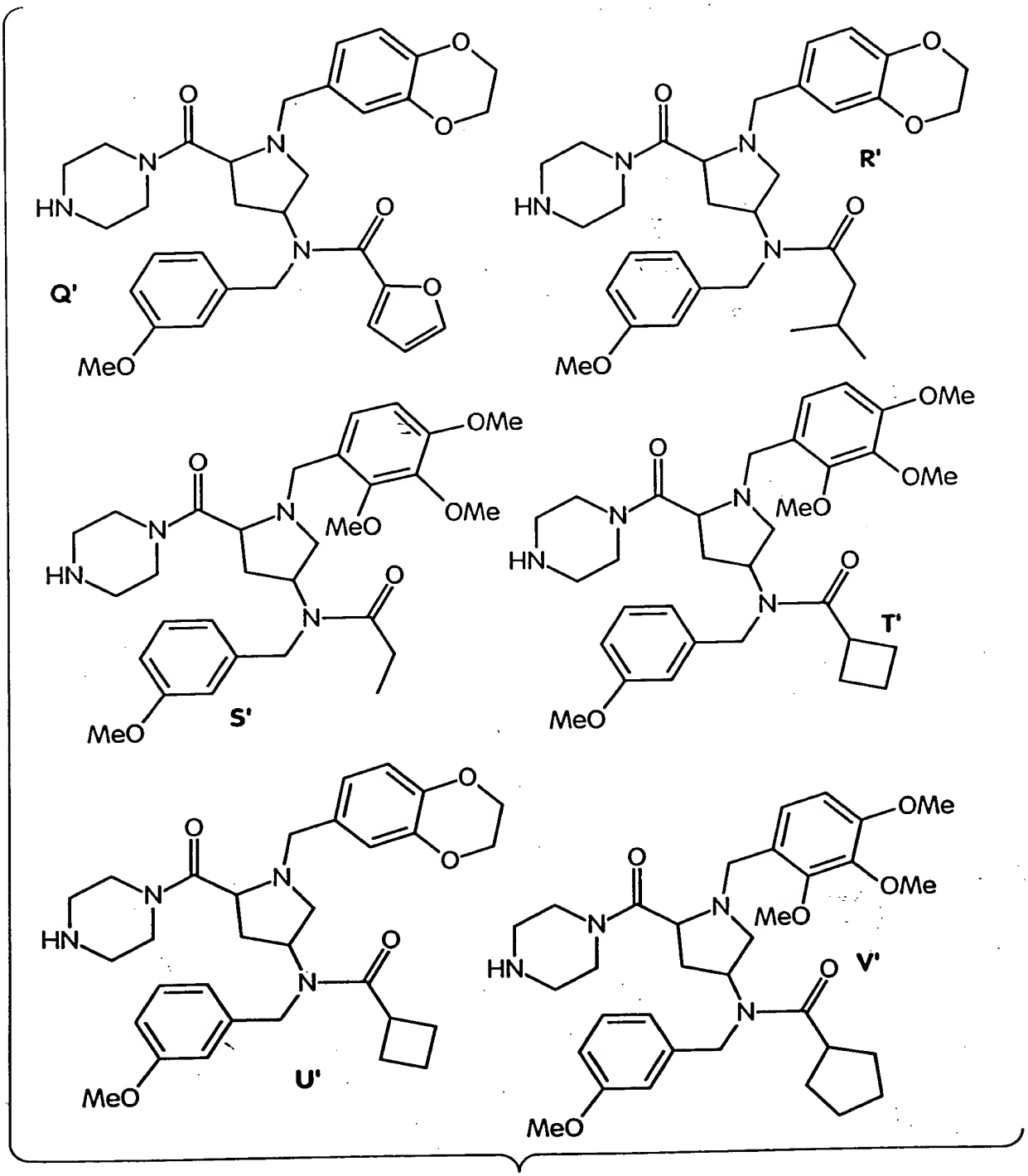

Fig. 32H

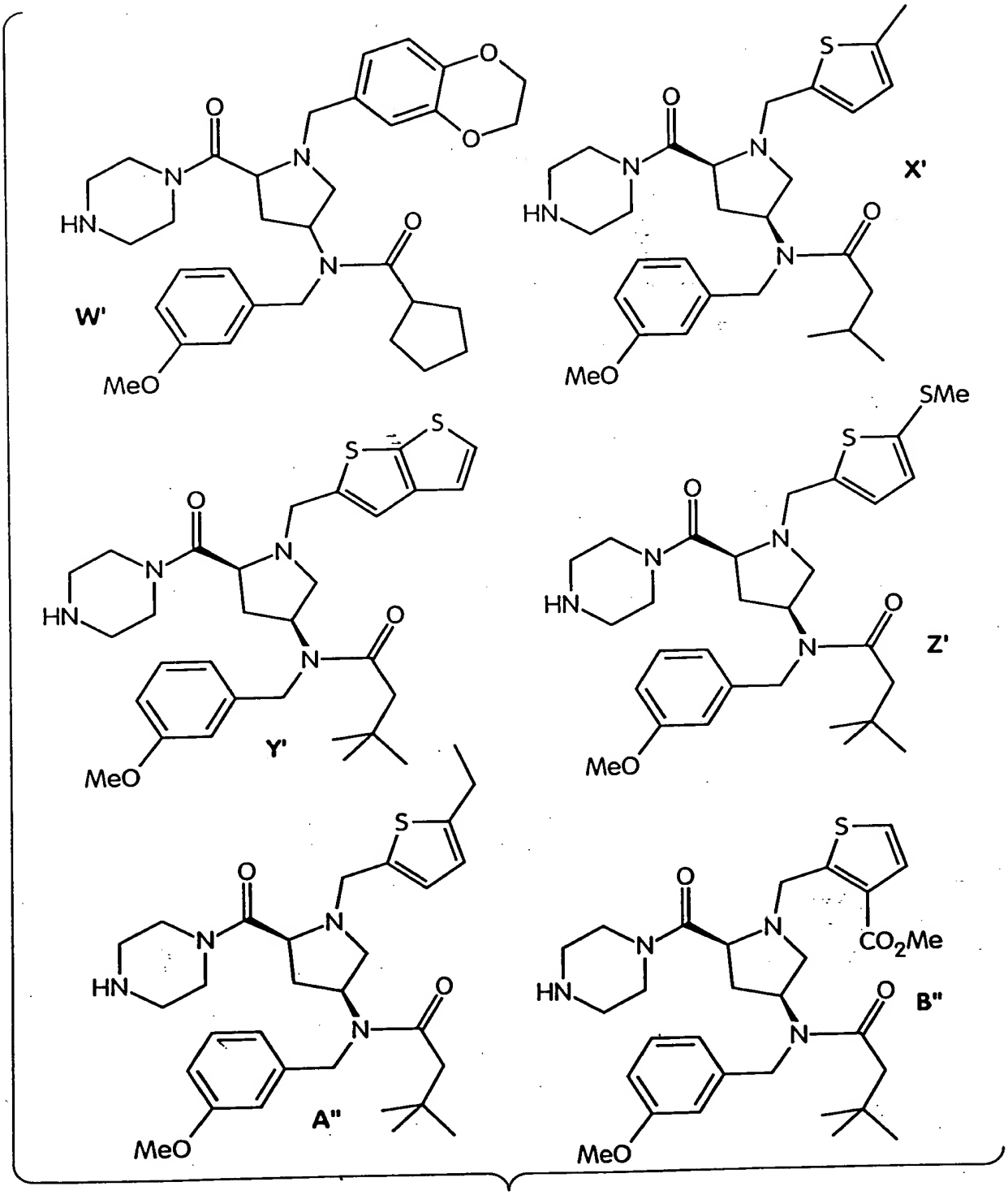

Fig. 32l

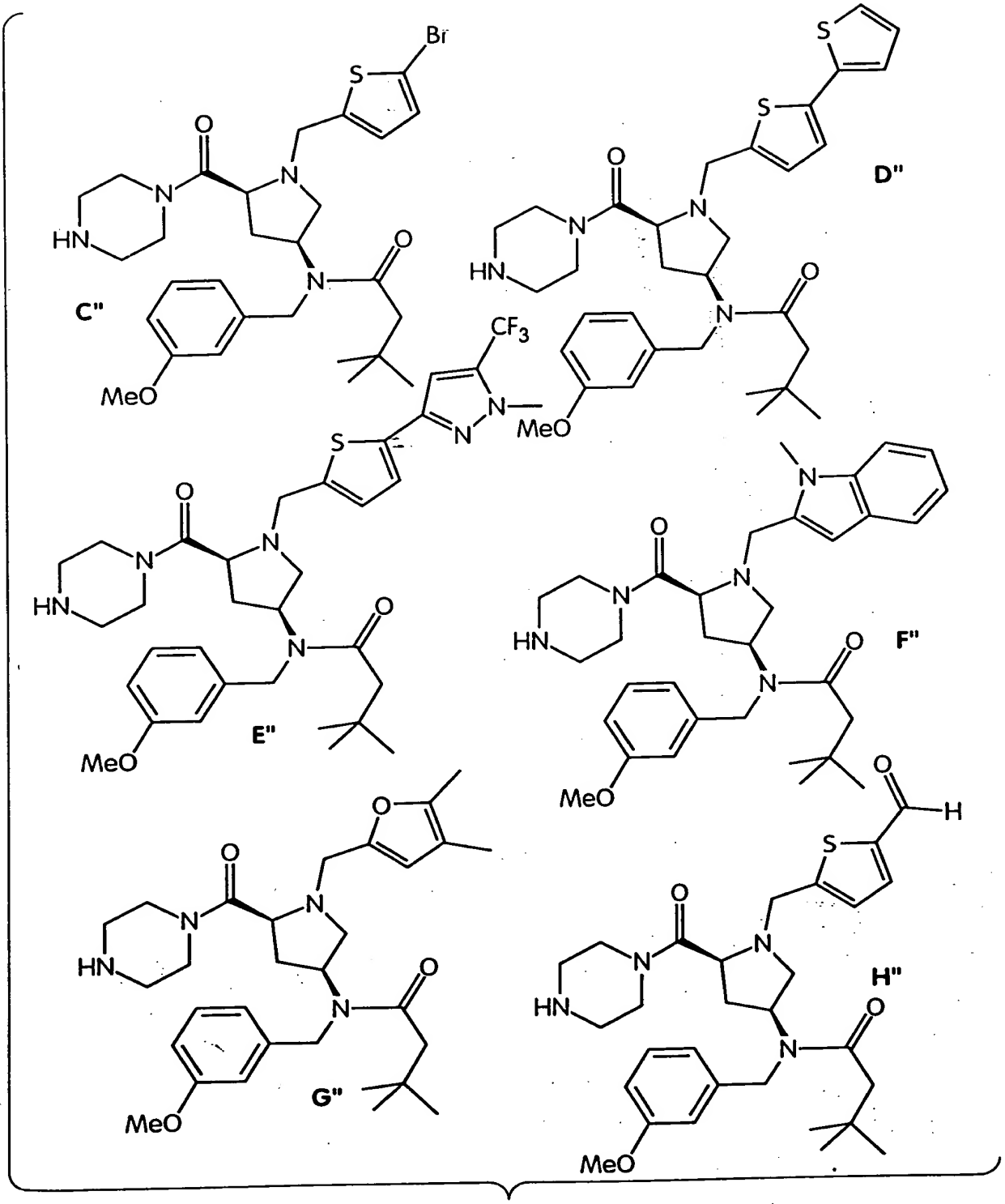

Fig. 32J

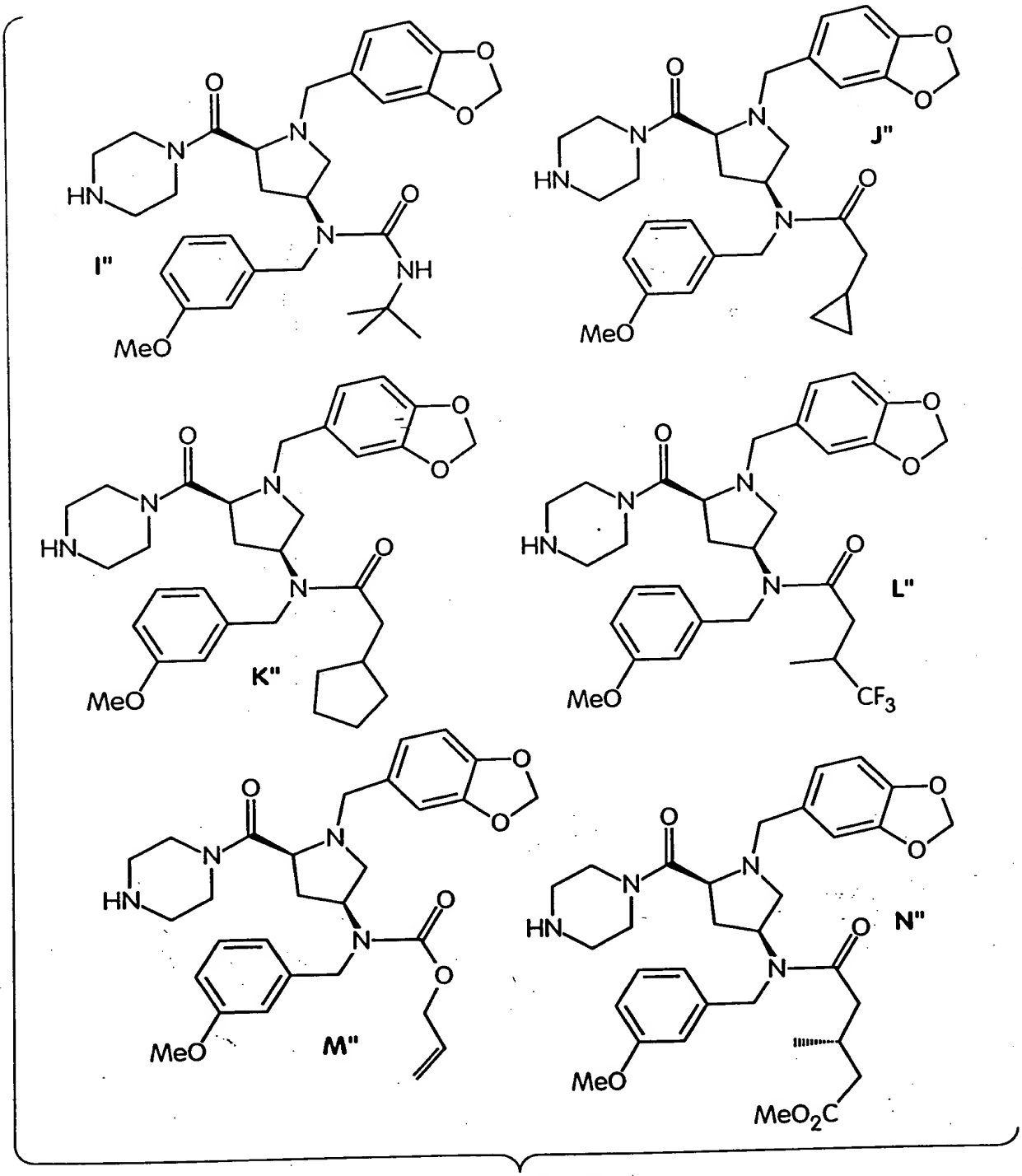

Fig. 32K

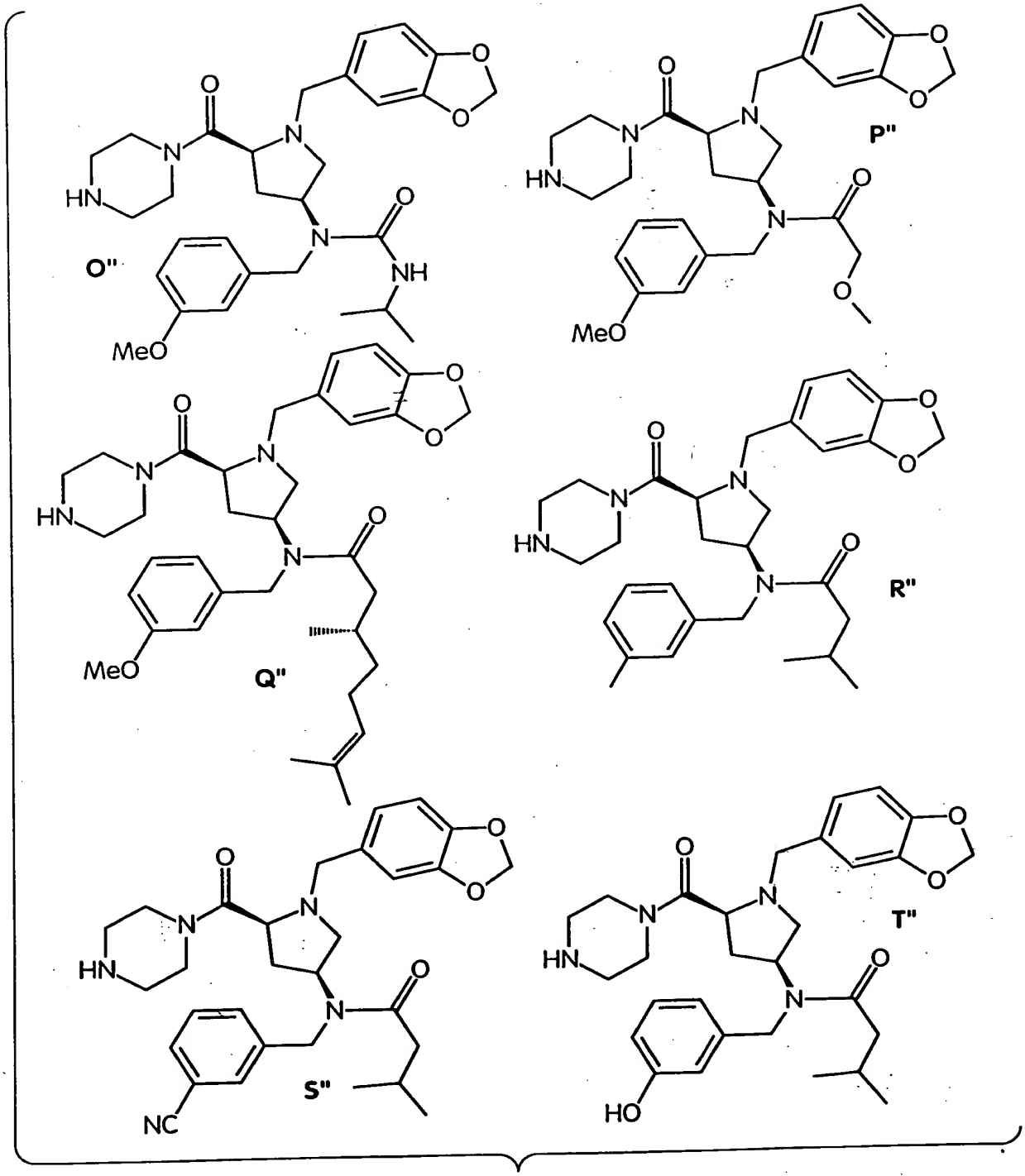

Fig. 32L

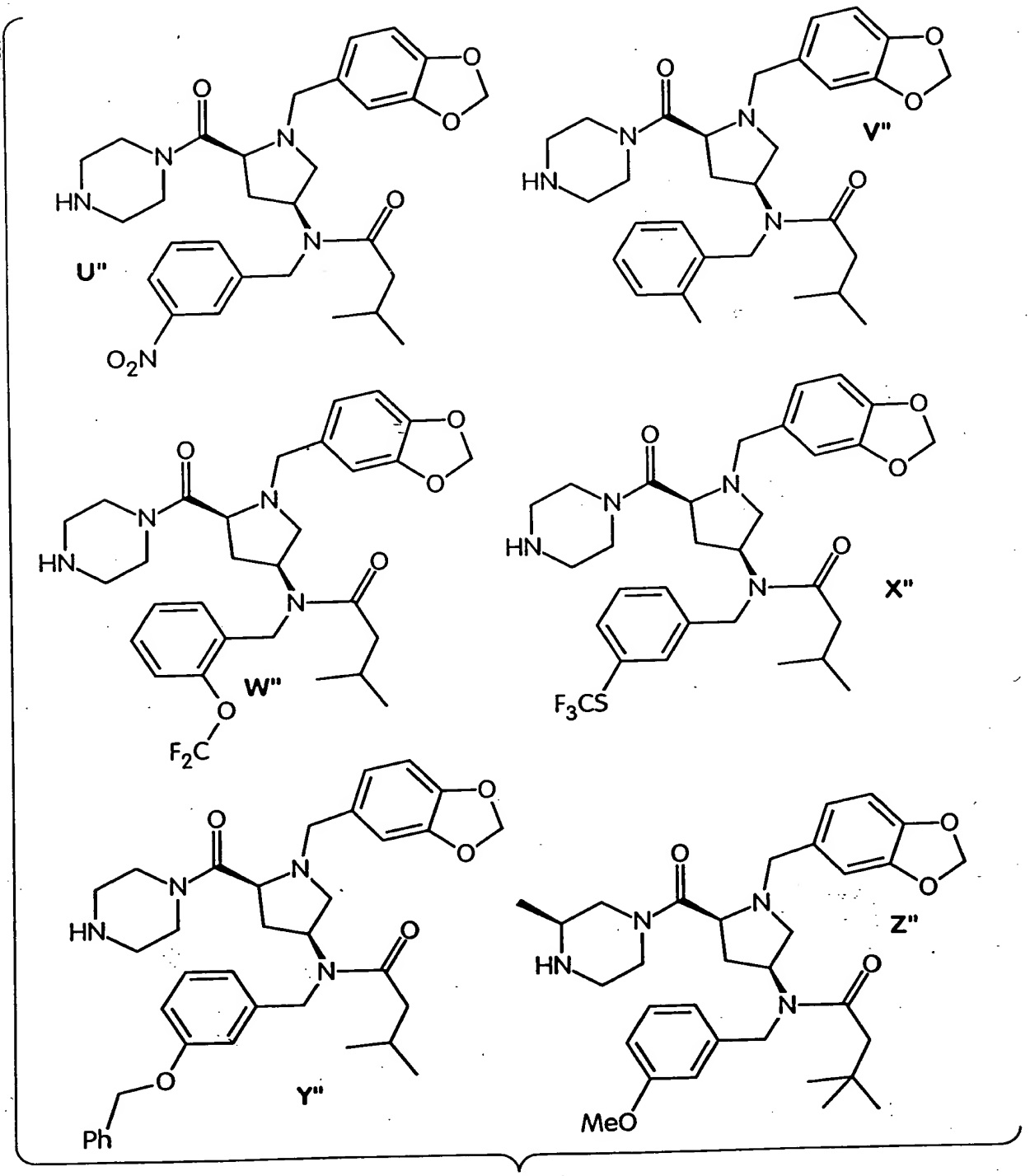

Fig. 32M

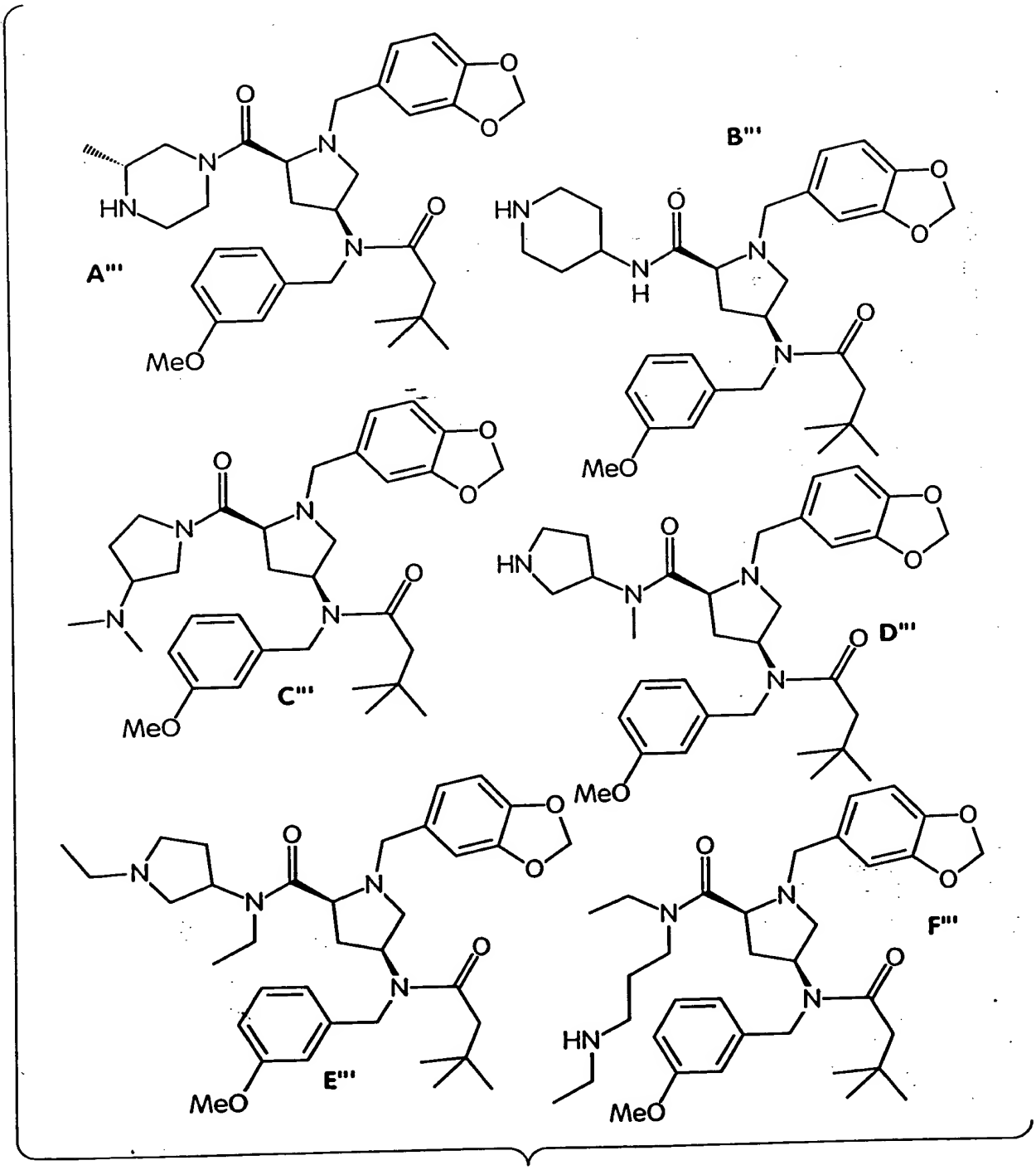

Fig. 32N

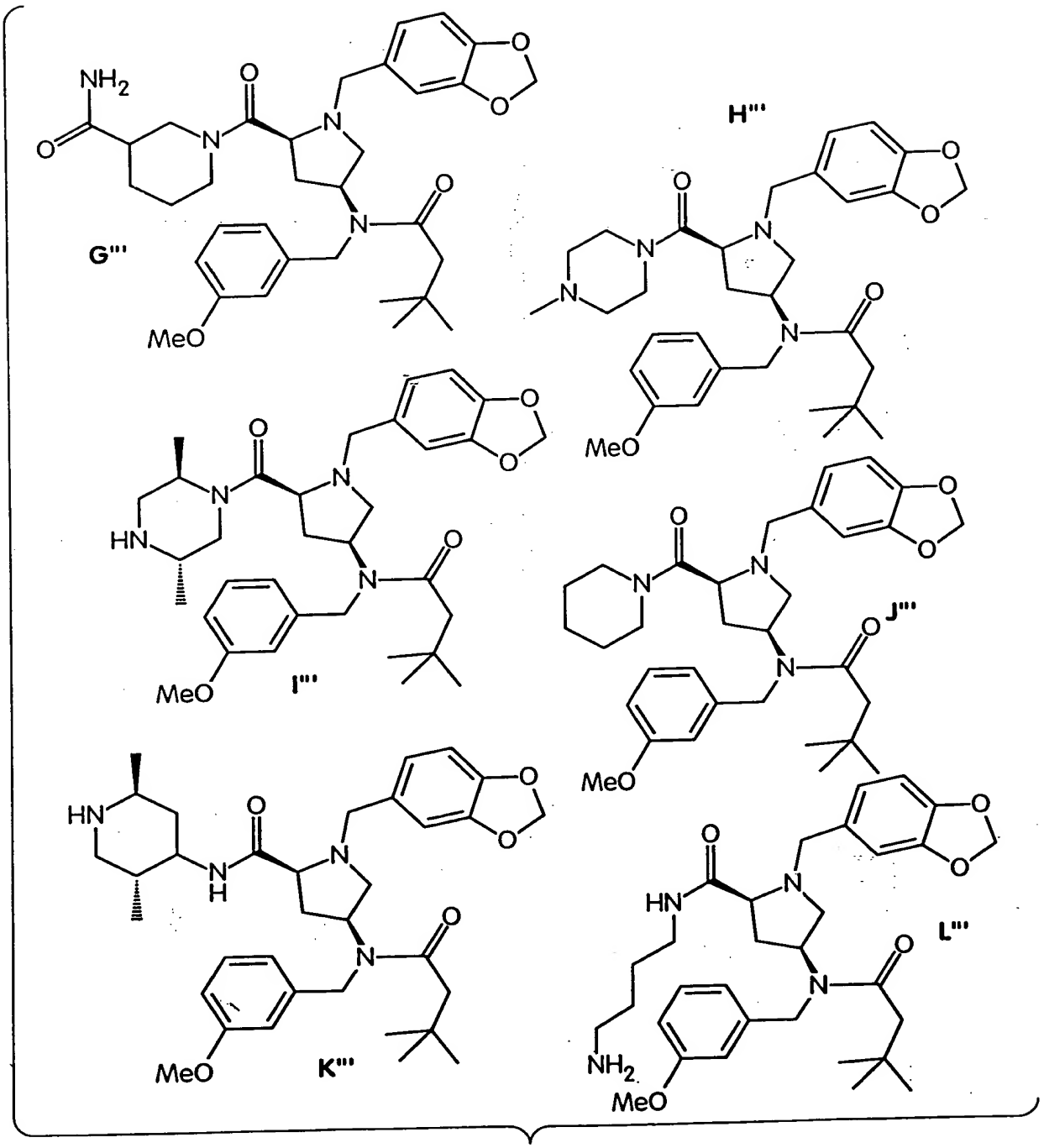

Fig. 320

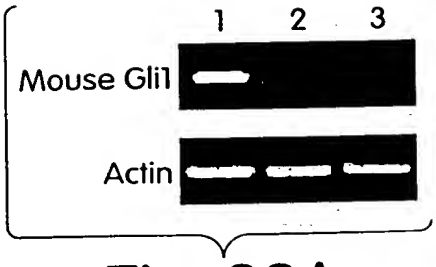

Fig. 33A

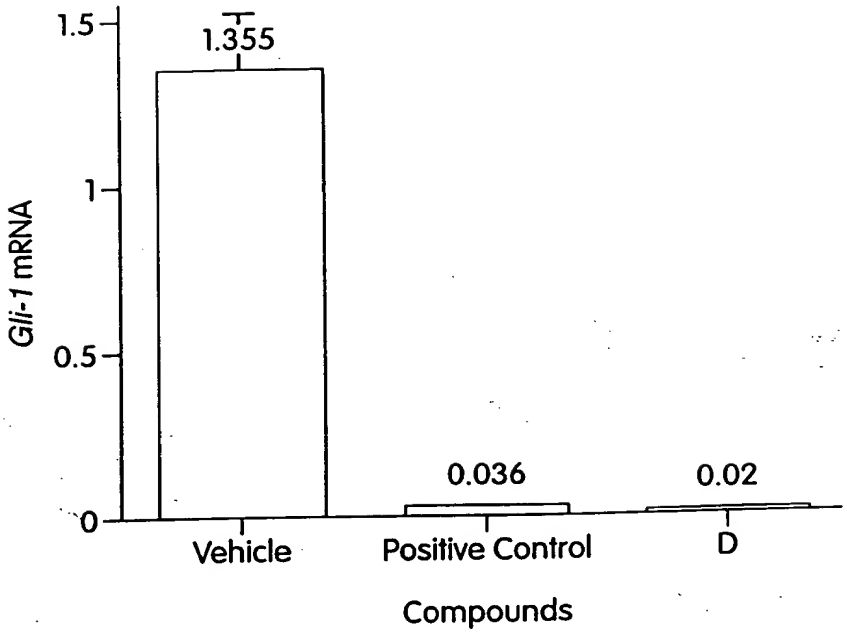

Fig. 33B

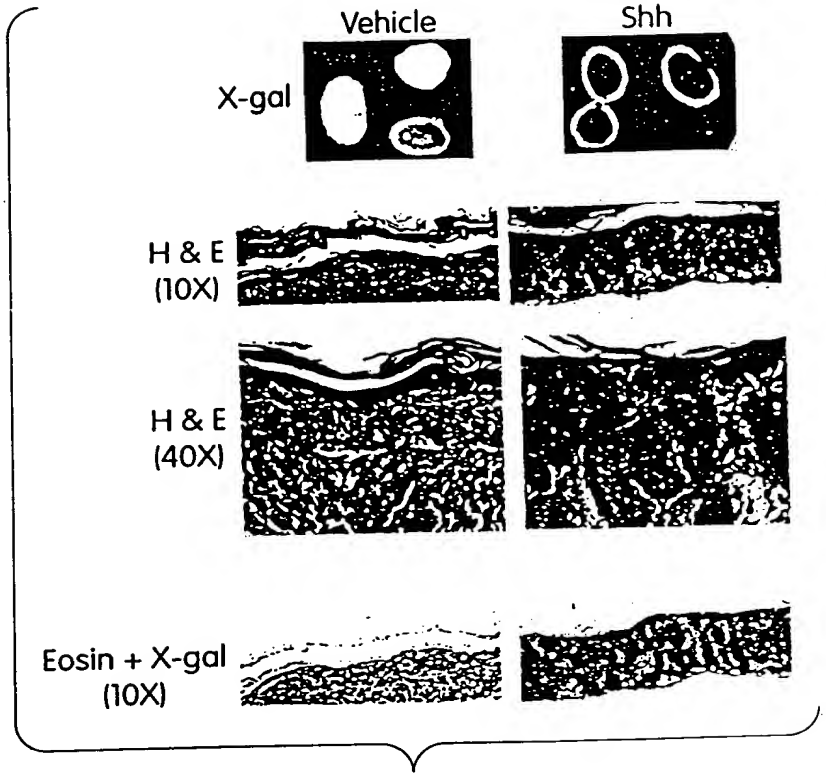

Fig. 34A

Shh treated E17.5 mouse skin punch

Fig. 34B

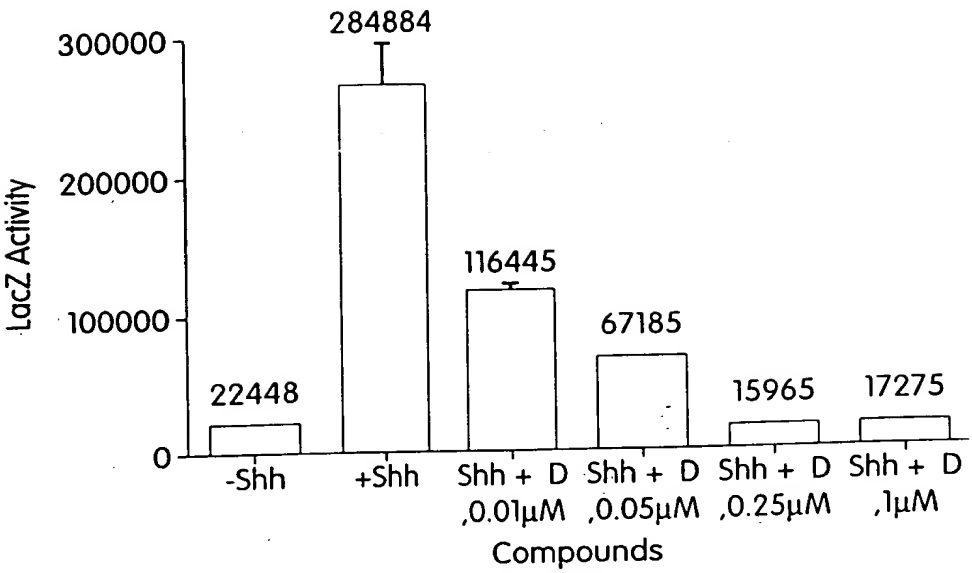

Fig. 35A

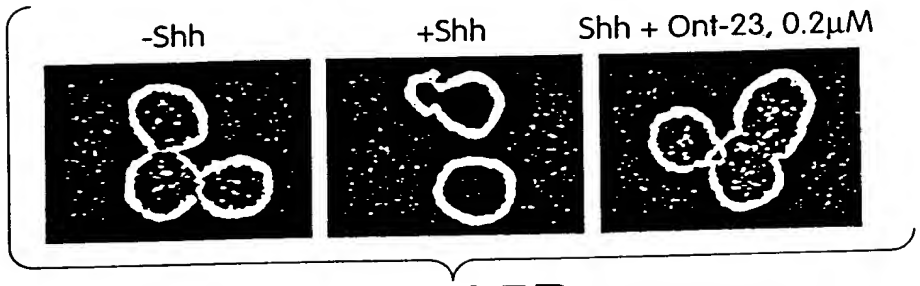

Fig. 35B

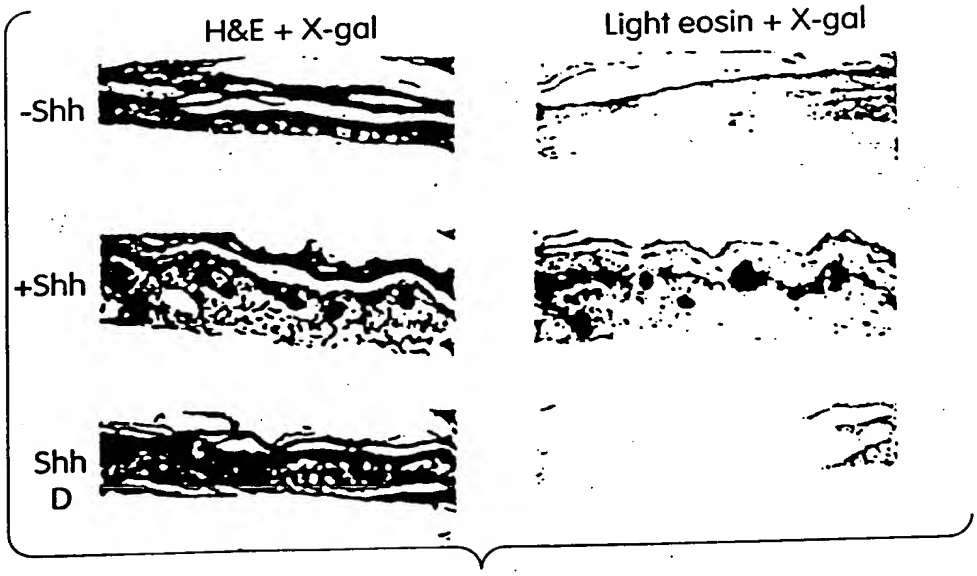

Fig. 35C

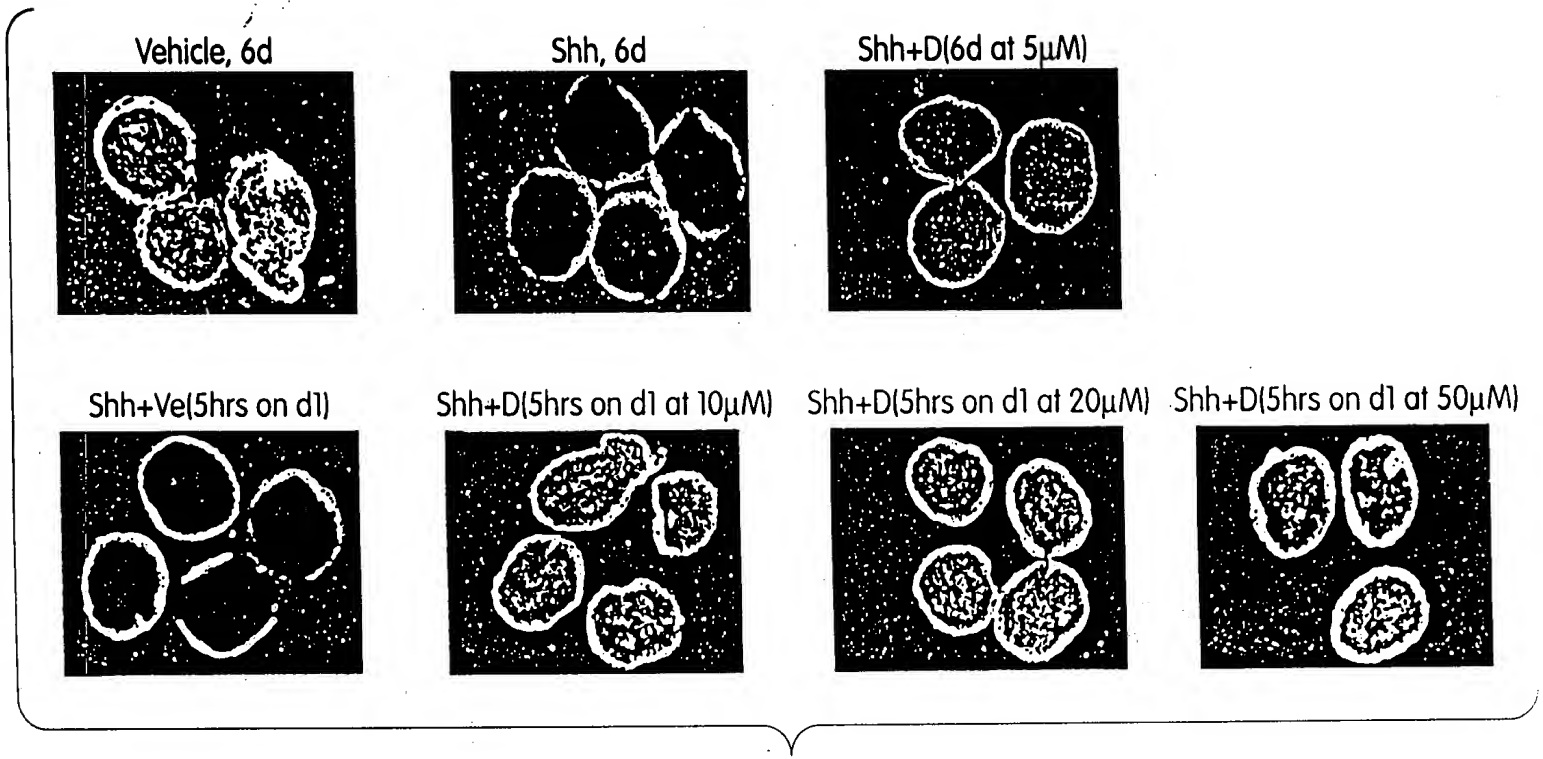
Vehicle, 6d
Shh, 6d
Shh+D(6d at 5μM)
Shh+Ve(5hrs on d1)
Shh+D(5hrs on d1 at 10μM)
Shh+D(5hrs on d1 at 20μM)
Shh+D(5hrs on d1 at 50μM)

Fig. 36

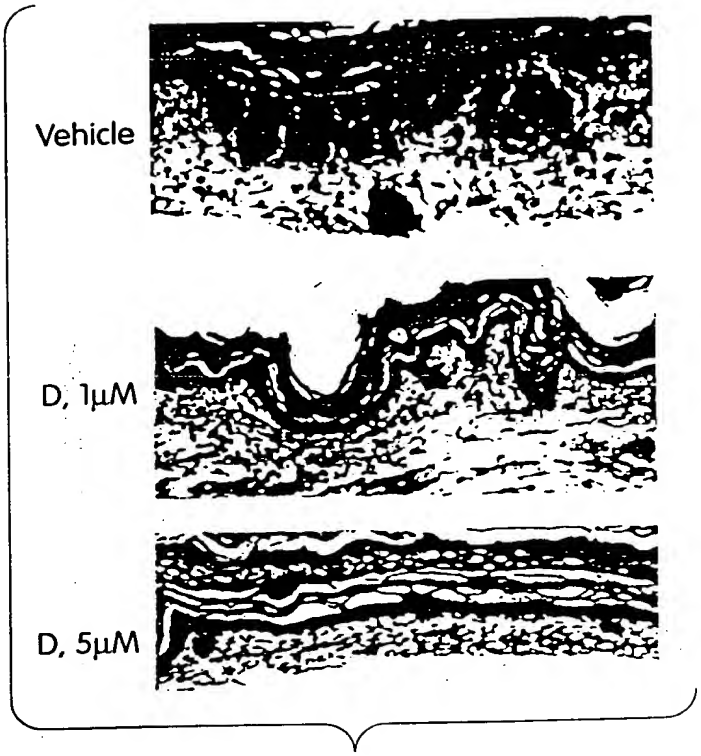

Fig. 37A

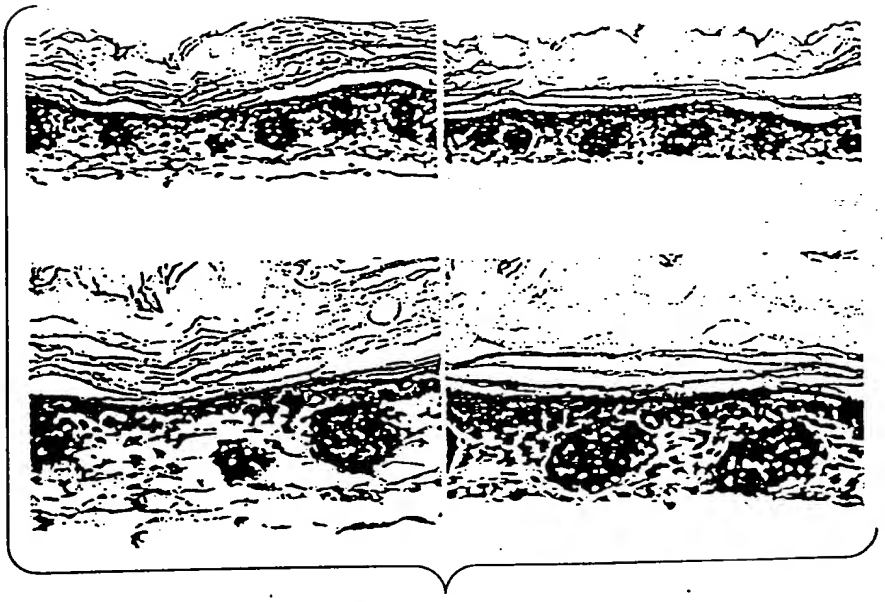

Fig. 37B

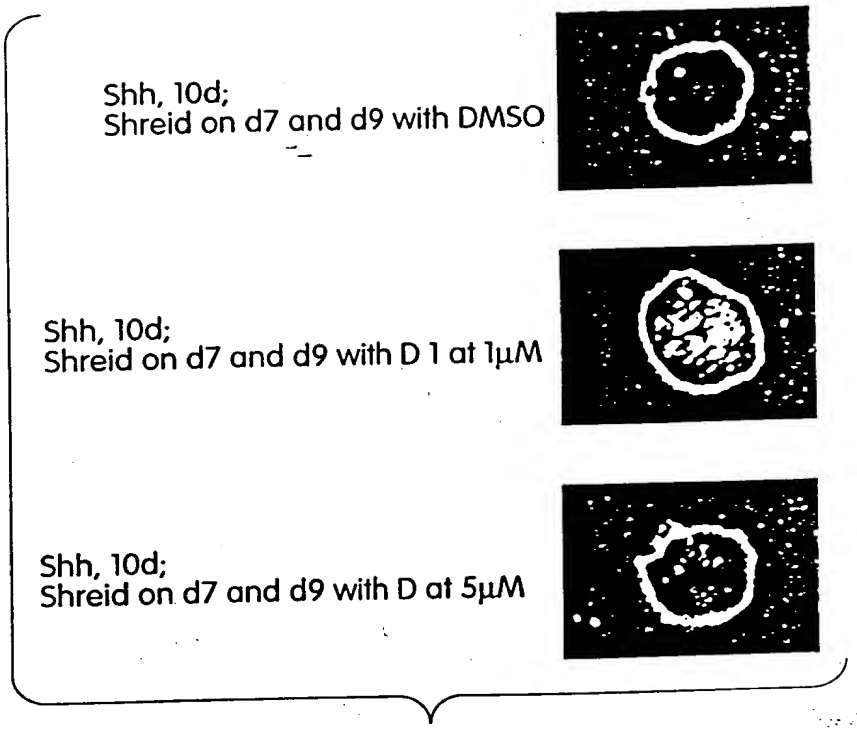

Fig. 38A

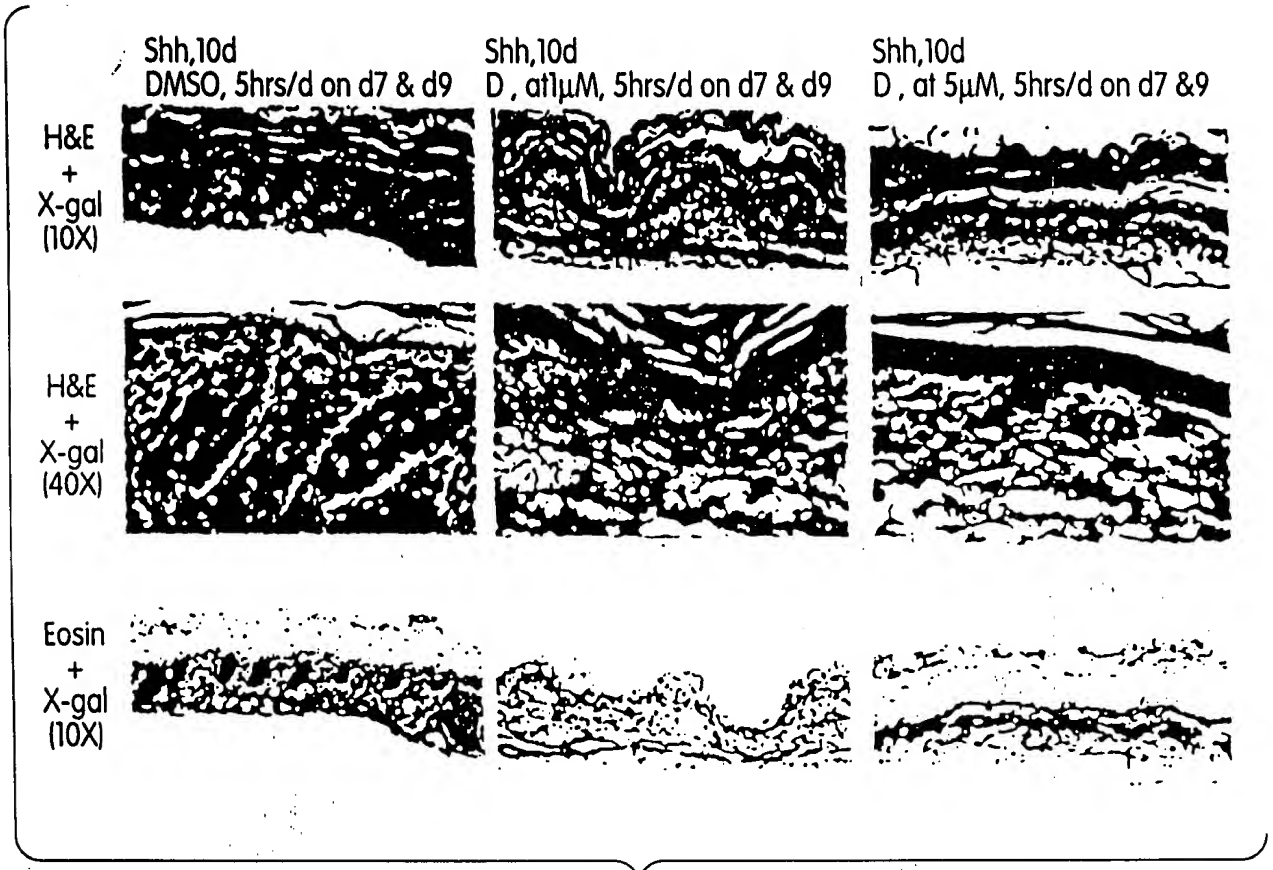
Shh,10d
DMSO, 5hrs/d on d7 & d9
Shh,10d
D , at1μM, 5hrs/d on d7 & d9
Shh,10d
D , at 5μM, 5hrs/d on d7 &9
H&E
+
X-gal
(10X)
H&E
+
X-gal
(40X)
Eosin
+
X-gal
(10X)

Fig. 38B

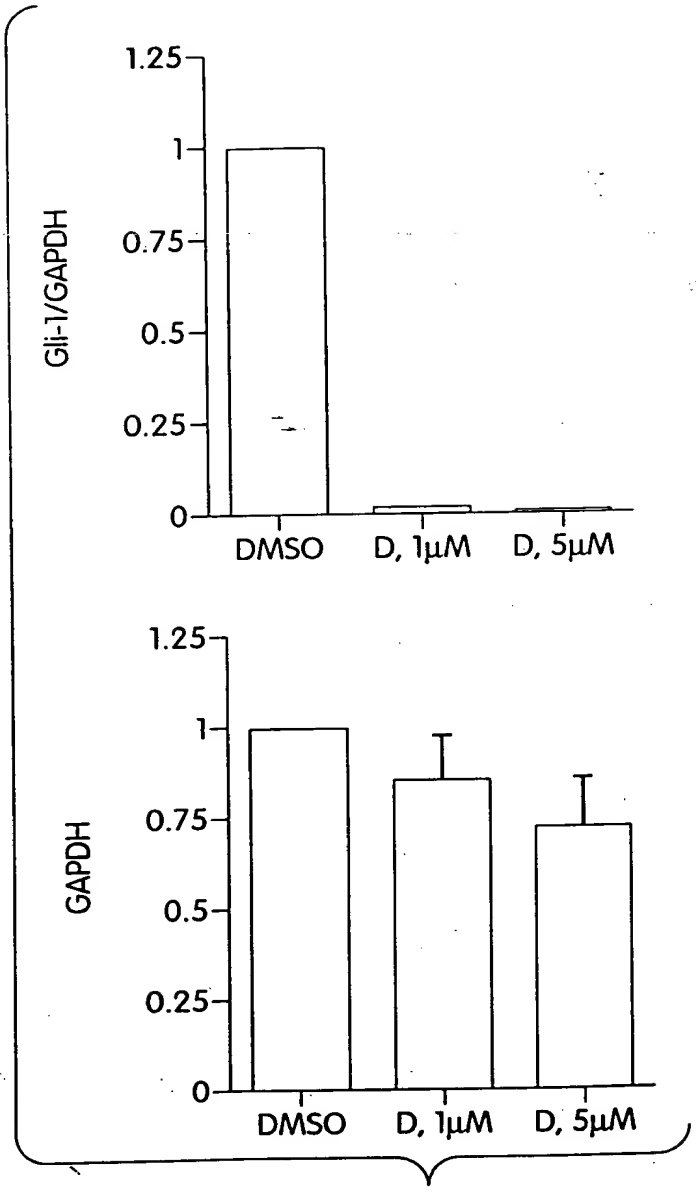
1.25
1
0.75
0.5
0.25
0
Gli-1/GAPDH
DMSO
D, 1μM
D, 5μM
1.25
1
0.75
0.5
0.25
0
GAPDH
DMSO
D, 1μM
D, 5μM

Fig. 38C

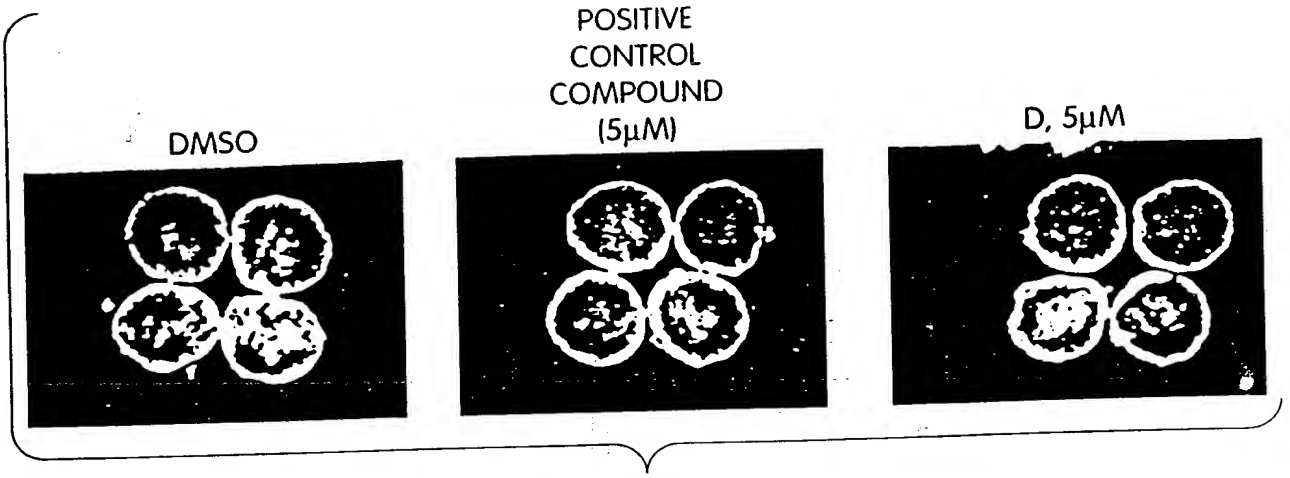

Fig. 39A

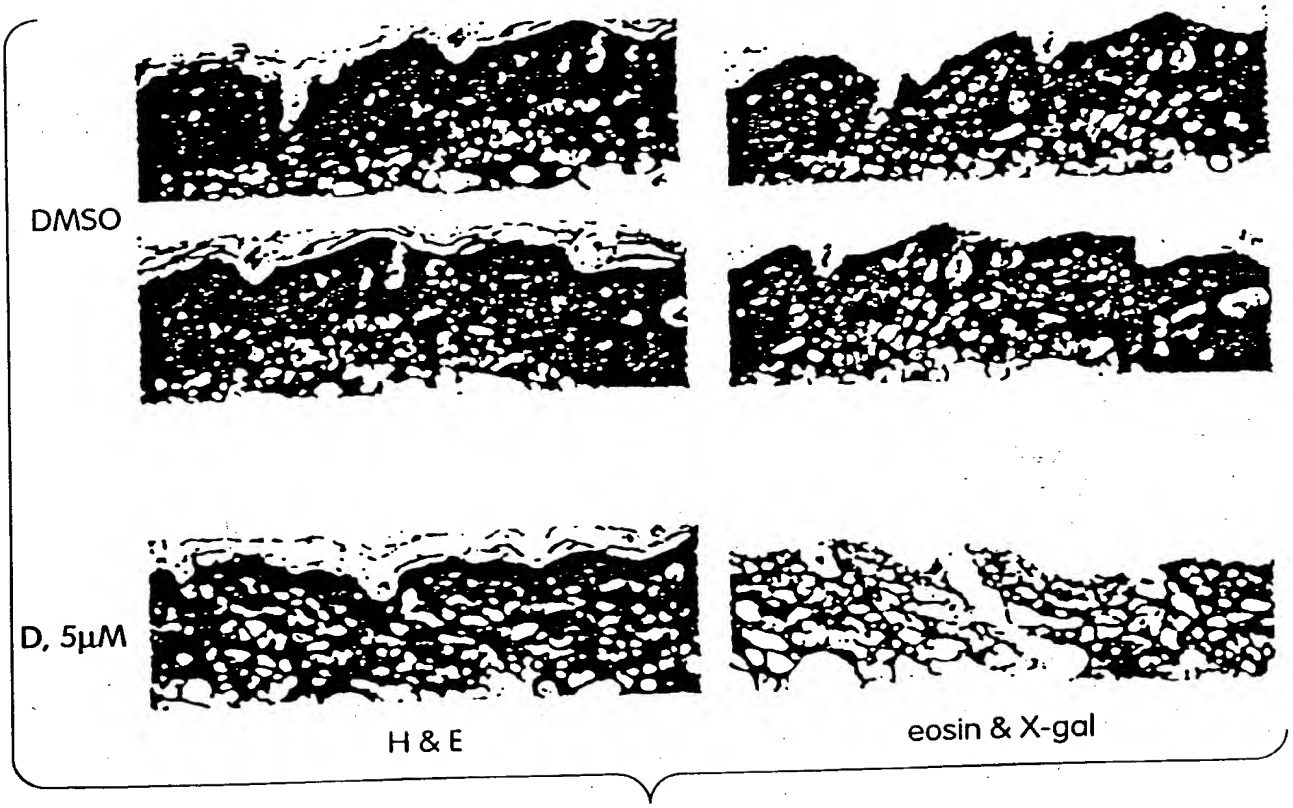

Fig. 39B

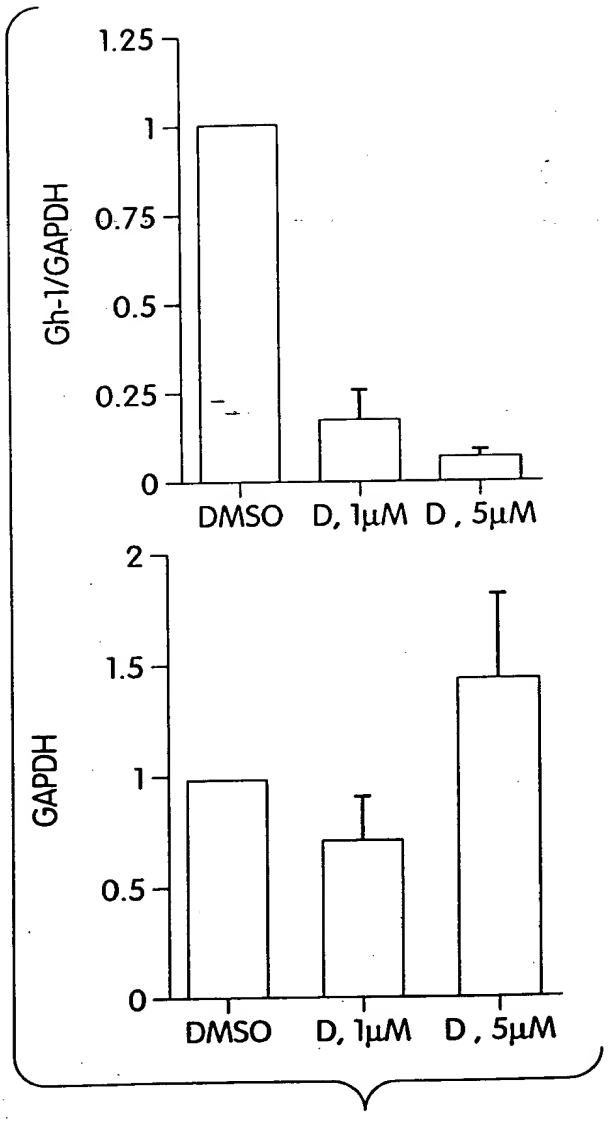
1.25
1
0.75
0.5
0.25
0
Gh-1/GAPDH
DMSO
D, 1μM
D , 5μM
2
1.5
1
0.5
0
GAPDH
DMSO
D, 1μM
D , 5μM

Fig. 39C

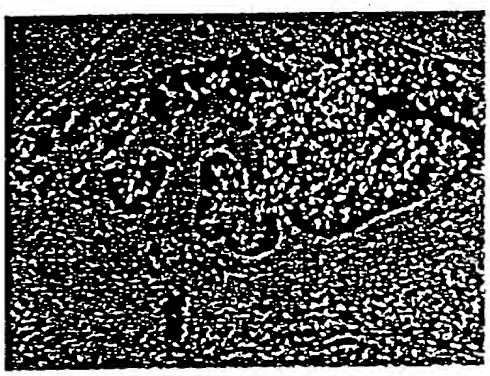

Fig. 40A

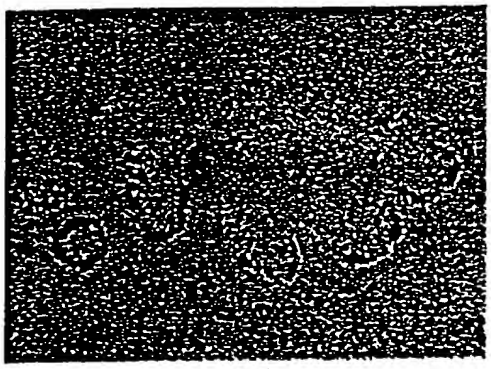

Fig. 40B

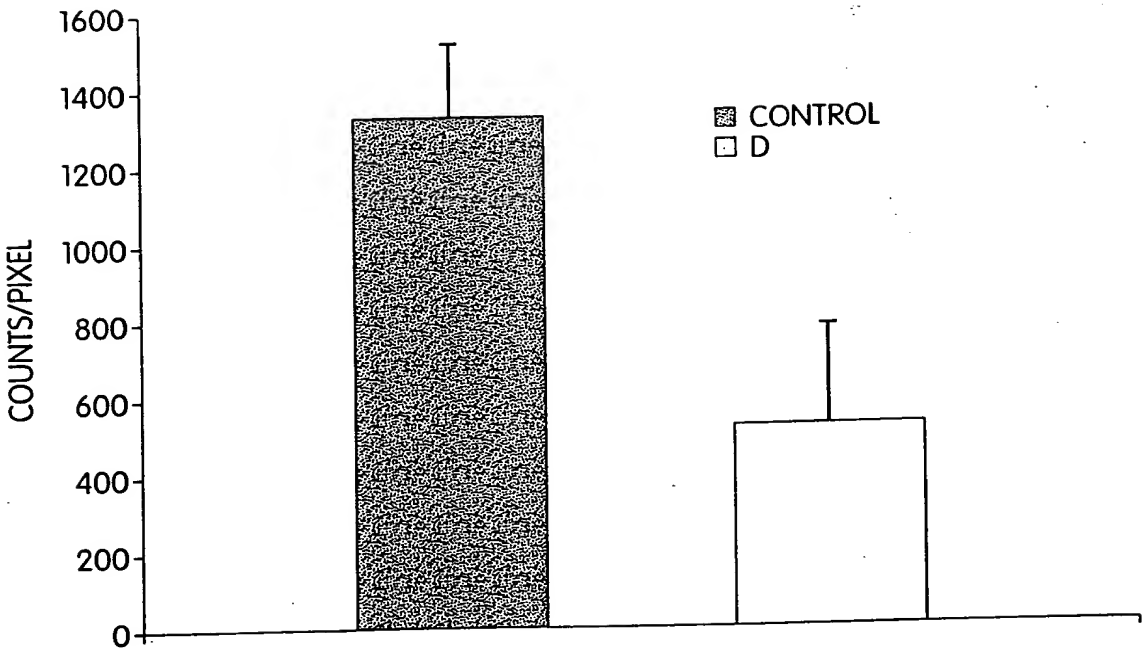

Fig. 41